The Mining Journal
AND ATMOSPHERIC RAILWAY GAZETTE,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 570.—Vol. XVI.] LONDON: SATURDAY, JULY 25, 1846. [Price 6d.

PARK HILL MINES, DEAN FOREST—consist of an extensive tract of IRON ORE, in conjunction with one of COAL—conveniently situate for the SUPPLY of BLAST-FURNACES, which may be erected adjacent. The IRON MINE includes TWO VEINS of ORE, containing 40 per cent. of iron. The COAL-FIELD includes FOUR VEINS of excellent COAL. The whole can be drained by level. It is desired to FORM a JOINT-STOCK COMPANY, to OPEN the MINES and ERECT FURNACES; or a PARTNERSHIP will be entered into, or a LEASE granted. The return on the investment will exceed 20 per cent.—For particulars apply (if by letter, post paid) to Henry H. Fryer, Esq., solicitor, Coleford, Gloucestershire. 1

WHEAL CONCORD.—Mr. CROFTS takes the earliest opportunity of apprising the ADVENTURERS in this MINE, that some SPECIMENS of SILVER-LEAD ORE, from the recent discovery, weighing nearly 3 cwts., in a single stone, will be open for their inspection on Monday, the 27th inst., at his office, 4, KING-STREET, CHEAPSIDE, LONDON. 2

PENNANT LEAD AND COPPER MINING COMPANY.
NOW IN WORK ON THE "COST-BOOK" PRINCIPLE.

Prospectuses, reports, maps, and every information, may be obtained at the offices of the company, No. 4, Salisbury-street, Strand; the solicitors, Messrs. Pocock and Marston, No. 10, Norfolk-street, Strand; or Charles Godwin, Esq., stock and share broker, No. 3, Royal Exchange-buildings. 3

HEWAS CONSOLS TIN AND COPPER MINE, CORNWALL.—This MINE is divided into 1024 SHARES, of £3 each.—Deposit £1 per share. All particulars respecting the remaining SHARES in this adventure, may be obtained on application to Messrs. Linthorne, Jones, and Co., agents to the company, 48, THREADNEEDLE-STREET, LONDON. 4

WHEAL HOLWELL MINING COMPANY.
IN 2048 SHARES.

This COPPER MINING SETT, lately opened, is situated in the parish of STOKE CLIMSLAND, CORNWALL, about one mile north-west of Lamerhoe Wheal Maria, and two and a half miles north-west of the Great Devonshire Consols (late the Great Wheal Maria), and is held under a license granted by his Royal Highness Albert Edward, Prince of Wales, and will be worked on the cost-book system, under which the liabilities of the shareholders are only from month to month, all accounts being audited and settled monthly. It is divided into 2048 shares, price 1*l.* 10*s.* per share, at which the greater portion of the shares have been disposed of. A finance committee will be chosen by the shareholders from amongst themselves at their first meeting. The management will be exclusively in London, the committee meeting once a month, or oftener, if necessary, and their services will be gratuitous.

By the 63d section of the Act for the Registration of Joint Stock Companies (7 and 8 Vic. cap. 110), it is enacted. "That nothing in this Act contained shall extend, or be construed to extend, to any partnership formed for the working of mines, minerals, and quarries, of what nature soever, on the principle commonly called the Cost Book principle."

Among the advantages of the Cost-Book system, may be mentioned that of any shareholder having the option at once to terminate his liability by relinquishing his shares, when all responsibility ceases for expenses incurred from the date of his leaving the company.—A surface plan, showing the lodes already discovered, may be inspected; and the following report from Capt. Floyd on the mine is highly important:—

"We have now discovered five copper lodes running at an average bearing of 12 deg. south of east.—No. 1 lode is 3 ft. wide, composed of gossan, prian, soft spar, and mundic. A very kindly lode.

No. 2 is 12 ft. wide, composed of a beautiful gossan, strongly impregnated with mundic; and from its character and locality, and being in such a splendid stratum of ground, there is no doubt whatever that it will turn out abundance of ore in depth. This lode is considered by all practical miners to excell all lodes yet discovered west of the Great Wh. Maria.

No. 3 is a parallel lode with the last mentioned, and is 4 ft. wide, composed of gossan, prian, and mundic, and intermixed with copper ore of a good quality; and I have no doubt it will ultimately prove very productive.

We have not sufficiently opened on No. 4 and 5 lodes, to be able to speak to their character and bearing. As far as I see, they are very kindly lodes indeed.

And now to conclude: with pleasure I congratulate you with having the good fortune to meet with such an undertaking.

June 21, 1846." SAMUEL FLOYD, Captain of the Mine."

Applications for the remaining shares may be made to the secretary of the company, James Crofts, Esq., No. 4, King-street, Cheapside, where prospectuses, and all details respecting the mine, may be obtained.—Dated July 7, 1846. 5

PRINCE EDWARD MINING COMPANY.
IN 2048 SHARES.

This COPPER and LEAD MINING SETT, lately opened, is situated on TREMOLLET DOWN, in the parish of STOKE CLIMSLAND, CORNWALL, about three miles westward of the Great Devonshire Consols, (late the Great Wheal Maria,) one mile west of Wheal Helwell, and is held under a license granted by his Royal Highness Albert Edward, Prince of Wales, at 1-15th dues, and will be worked on the "COST-BOOK" system, under which the liabilities of the shareholders are only from month, to month, all accounts being audited and settled monthly. It is divided into 2048 shares, and a payment of 1*l.* 10*s.* per share will be required at the time of allotment, when each adventurer is required to sign the Cost Book. A finance committee will be chosen by the shareholders from amongst themselves at their first meeting immediately after the shares are disposed of. The management will be exclusively in London, the committee meeting once a month, or oftener, if necessary, and their services will be gratuitous.

By the 63d section of the Act for the Registration of Joint Stock Companies (7 and 8 Vic. cap. 110,) it is enacted, "That nothing in this Act contained shall extend, or be construed to extend, to any partnership formed for the working of mines, minerals, and quarries, of what nature soever, on the principle commonly called the Cost Book principle."

Among the advantages of the Cost-Book system, may be mentioned that of any shareholder having the option at once to terminate his liability by relinquishing his shares, when all responsibility ceases for expenses incurred from the date of his leaving the company.—A surface plan, showing the lodes discovered, may be inspected; and the following report from Capt. Seccombe on the mine is deserving of attention:—

"In compliance with your request, I have this day inspected a sett, called Tremollet Down Consols, situate in the parish of Stoke Climsland, in the county of Cornwall, and find it a very extensive sett, being about 1036 fms. from north to south, and 670 fms. from east to west. Several east and west lodes are known to run through the sett, some of which have been laid open near the surface by costeaning—one of which is a large lode, and found to contain a quantity of gossan. This lode is not yet laid open to a sufficient depth to enable an opinion being formed as to its future productiveness; the lodes are not running parallel, but approximate and intersect each other. At the junction of lodes, they are often found to contain large deposits of ore. I consider it necessary to lay open the whole of the lodes by costeaning, and sink a few fathoms on their course at different points, to ascertain the most desirable point to commence permanent operations for the development of the lodes in depth; there is a large stream of water, that can be made available for giving the mine a partial trial, and, when required, can be used for crushing and dressing ores, &c. A large north and south lode has also been discovered, and sunk on to the depth of seven fms.—at which point it is composed chiefly of gossan, quartz, and mundic, and will be of great advantage for cross-cutting the east and west lodes.

I am, Sir, your obedient servant,

May 25, 1846." "SAMUEL SECCOMBE.

Application for shares may be made to the secretary of the company, James Crofts, Esq., No. 4. King-street, Cheapside, where prospectuses, and all details respecting the mine, may be obtained.—Dated July 1, 1846. 6

CHATHAM NICKEL AND COBALT MININC COMPANY.
SITUATE AT CHATHAM, STATE OF CONNECTICUT, UNITED STATES.

Capital £20,000, in 4000 shares, of £5 each.—Deposit £1 per share. 7

This company is incorporated pursuant to the law of the State of Connecticut, which limits the liability of the shareholders to the amount paid upon their shares.

"The ores have been analysed by eminent practical chemists of both England and America, and have been found to average 18 per cent. cobalt and nickel—about 4 per cent. cobalt, and 12 to 18 per cent. nickel."

Application for shares, and full particulars, to be obtained to the solicitors of the company, Hull Terrell, Esq., 30, Basinghall-street; and of Mr. R. E. Little, stockbroker, 11, Warnford-court, Throgmorton-street, London.

THE PATENT SAFETY FUSE,
FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Camborne, Cornwall. 8

NOTICE TO THE MANAGERS OF MINING COMPANIES,
SMELTING WORKS, &c.

Mr. MITCHELL (late Mitchell and Field) begs to announce, that ASSAYS and ANALYSES of all descriptions of ORES, MINERALS, and FURNACE PRODUCTS, are conducted at his LABORATORY, 23, HAWLEY-ROAD, KENTISH TOWN, to which direction all communications are to be addressed.

N.B.—Instruction in all branches of assaying and mineral analysis as usual. 9

TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GREASE for MACHINERY and AXLES of every description.—JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE is—after trials on machinery and axles of every kind where constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public.

References to scientific and practical men can be given, and testimonials shown of its great excellence.—Samples forwarded on application at the manufactory, Green-street, Wellington-street, Blackfriars-road, London. 10

LOUVAIN A LA SAMBRE RAILWAY—DIRECT TO NAMUR AND CHARLEROY.—The directors of the above company, lately known as the Louvain and Jemeppe Railway, have much pleasure in announcing that the FIRST ANNUAL MEETING, at Brussels, of their shareholders, which, in compliance with the statutes whereby the society is governed, had been convened for the 8th of July instant, took place on that day, under the presidence of the chairman of the company.

On this occasion the entire of the proceedings of the previous meeting, held at the London Tavern, Bishopsgate-street, including the affirmation of the report of the directors, were confirmed, the different modifications of the original project, especially that most important improvement by which Namur and Charleroy have become two of the principal termini of the line, agreed to, the convention of the 28th of January last, and the definitive law of the 30th of March following, adopted, and every measure of the Board of Administration, whether issued at London or Brussels, declared to be and recognised as the act of the company.

Thus sanctioned, and being encouraged by the brightest prospects, the directors have only to assure their shareholders, that the works in Belgium, which are now proceeding with vigour, will be carried on with the utmost activity and dispatch; and further to remind them, that a call of £2 per share has been advertised—one moiety whereof (£1) was due on the 2d of the present month—and the remaining moiety (£1) is required to be paid into the bank of Messrs. Drewett and Fowler, Princes-street, Mansion-house, on or before the 2d of October next ensuing. JOHN BARNES, Chairman.

28, Threadneedle-street, July 21, 1846. GEORGE DANCE, Secretary. 11

ASTURIAN MINING COMPANY.—Notice is hereby given, that the remainder of the SHARES in this company upon which the calls past due have not been paid on or before the 31st, will be CANCELLED, and new shares issued for sale on account of the company. By order,

9, Austinfriars, July 23, 1846. K. MACKENZIE, Secretary. 12

COMBMARTIN AND NORTH DEVON LEAD AND SILVER MINES.—Notice is hereby given, that the GENERAL ANNUAL MEETING of the shareholders in the above concern will be HELD at the counting-house, on the mine, on Wednesday, the 19th day of August next, at Twelve o'clock at noon.

Combmartin Mine, July 21, 1846. C. R. WEBB, Secretary. 13

INDUSTRY—ECONOMY—PERSEVERANCE.

MINING COMPANY OF IRELAND.—The board of directors of the Mining Company of Ireland hereby give Notice, that a DIVIDEND, at the rate of 12½ per cent. per annum, upon the company's deposited capital stock, for the half-year ended 31st May last, being EIGHT SHILLINGS and NINEPENCE per share, will be PAYABLE on and after the 1st of August next, at the company's office, 30, Lower Ormond-quay, from Ten until Two o'clock.—The books for transfer of shares will be closed from 25th inst. to 1st of August. By order,

Dublin, July 15, 1846. RICHARD PURDY, Secretary. 14

IRELAND.—BOARD OF PUBLIC WORKS.—DRAINAGE, NAVIGATION, AND MILL POWER COMMISSION—IRELAND.

Acts 5 and 6 Vic., c. 89; 8 and 9 Vic., c. 69; and 9 Vic., c. 4.

MONEYS TO BE BORROWED.

The commissioners, acting under the provisions of the above-named Acts, are prepared to RECEIVE PROPOSALS FOR LOANS OF MONEY, for the EXECUTION of WORKS in various districts in IRELAND. The amount required for the PRESENT YEAR, will probably be

TWO HUNDRED THOUSAND POUNDS. 15

The security created by the Acts is *a first charge* on the lands to be drained or improved, *with priority, and in preference to all charges and incumbrances thereon* (except quit rent and rent charge, in lieu of tithe), and a further charge upon lands within one mile of the lands to be drained belonging to the same proprietors, but without priority as to such last-mentioned lands.—Debentures, transferable by simple endorsement, without stamp duty, will be issued to lenders, free of any expense, for any amount from £50 upwards.

Interest will be paid half-yearly, from the date of the debenture, on each 1st day of January and 1st day of July; and the principal money secured by each debenture will be paid off in ONE SUM, pursuant to the provisions of the Act.

Proposals, marked on the envelope, "Proposals for Drainage Loans for —— District," to be sent into the secretary, Office of Public Works, Custom-house, Dublin, stating the amounts, and the rate of interest at which loan is proposed to be made.

The maximum rate of interest fixed by the Act is 5 per cent.

Persons desirous of proposing, can obtain any further information, by application at the Office of Public Works, between Two and Three o'clock, each day.

By order, JOS. C. WALKER, Secretary.

Office of Public Works, Custom-house, Dublin, July 2, 1846.

TO IRONMASTERS, FOUNDERS, &c.—WANTED, by a gentleman (of thorough business habits, and who has a first-rate connection), an AGENCY in LONDON, for the SALE of CASTINGS, PIPES, &c., or BAR and PLATE IRON, or any of the METALS, either raw or manufactured.—Most satisfactory references and security given. Address (post-paid) to "A. Z.," care of B. Nind, Esq., solicitor, 31, Nicholas-lane, Lombard-street.—July 23. 16

TO CAPITALISTS, ENGINEERS, AND IRONFOUNDERS.—TO BE LET, OR SOLD, BY PRIVATE CONTRACT, the newly-erected IRON FOUNDRY AND STEAM-ENGINE FACTORY, conveniently situated at TIVIDALE, near Dudley, and fronting the turnpike-road from Birmingham to Dudley, on the upper level of the Birmingham Canal, and in the immediate vicinity of the proposed railway from Birmingham to Wolverhampton and Dudley. The whole fitted up with every convenience for an extensive trade, and ready for immediate occupation.—For further particulars apply to Mr. Hickman, Old Bank, Dudley. 17

TO BOILERMAKERS, IRONFOUNDERS, AND OTHERS.—The directors of the COMMERCIAL GAS LIGHT AND COKE COMPANY will meet at the office, at the works, on Wednesday, the 5th day of August, to RECEIVE TENDERS for the ERECTION and CONSTRUCTION of a GASHOLDER, of 80 feet diameter, with the columns, girders, &c.—Plans and specifications may be seen, and particulars obtained, on application to Mr. Isaac Mercer, the company's engineer, at the works, between the hours of Ten and Two.—Tenders, sealed and endorsed, addressed to the secretary, must be delivered before Twelve o'clock on the day above-mentioned.

The directors do not bind themselves to accept the lowest tender.

By order of the board, H. AVERY, Secretary. 18

Commercial Gas Light and Coke Company's Offices,
Ben Jonson's-fields, Stepney, July 22, 1846.

IMPORTANT TO ENGINEERS, MANUFACTURERS, RAILWAY AND STEAM-BOAT COMPANIES.

Messrs. W. & C. MATHER beg to call the attention of the ABOVE PARTIES to their IMPROVED ELASTIC METALLIC PISTONS.

The PRINCIPAL FEATURE and ADVANTAGE of THIS IMPROVEMENT is—

1. Its great ELASTICITY and SELF-ADJUSTING PROPERTIES, which enable it to yield to any inaccuracy of the cylinder, whether oval or taper, and to move with the least possible friction.

2. Its extreme SIMPLICITY and LIGHTNESS, consisting of only two pieces of metal, having the vertical and lateral pressure in due and proper proportion, independent of each other.

3. It takes the LEAST possible SPACE, and is well adapted for air and water-pumps, as it allows of a larger water way.

Messrs. W. & C. MATHER feel confident that it is the BEST ELASTIC METALLIC PACKING yet known, for the above reasons. 19

Models may be seen at the Salford Iron-Works, Manchester; at W. Barker's, engineer, Newton-Moor; and also at J. Mather's, engineer, Beaufort-street, Chelsea, London.

STEAM COAL—WITHOUT SMOKE, as per experiments made at her Majesty's Dockyard, Woolwich.

CAMERON'S COALBROOK STEAM COAL, AND SWANSEA AND LOUGHOR RAILWAY COMPANY.—(Completely Registered and Incorporated.)

OFFICES—2, MOORGATE-STREET, LONDON. 20

The directors are now prepared to supply steam ship companies, manufacturers, shippers, and others, with the company's steam coal, either at the company's wharf at Swansea, or in London. A statement, showing by comparative trial the superiority of this coal for steam purposes over every other, and a scale of prices, may be had on application at the company's offices here, or at their wharf at Swansea.—March 18, 1846.

STEAM-ENGINES.—From 8 to 20-horse power ENGINES ALWAYS IN STOCK.

Apply to Mr. CAPPER, ENGINE-MAKER and FOUNDER, BIRMINGHAM. 21

Price.....£14 per horse-power.

BEARD'S COLOURED PHOTOGRAPHIC PORTRAITS are taken daily at 85, King William-street, City (where applications for licenses should be made); 34, Parliament-street, Westminster; and the Royal Polytechnic Institution, Regent-street.—"The likenesses now obtained—besides their unfailing correctness—have all the brilliancy and boldness of effect which can be imparted by the most accomplished artist."—*Mining Journal*, April 25, 1846. 22

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES, AND CLOCKS.—E. J. DENT, 82, Strand, and 33, Cockspur-street watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each. 23

DENT'S PATENT DIPLIEDOSCOPE, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

JAMES LANE, MINING SHAREBROKER, 73, *OLD BROAD-STREET, LONDON.* 24

WILLIAM TRENERY, DEALER IN RAILWAY AND MINING SHARES.—ESTABLISHED TEN YEARS. *OFFICES, No. 50, THREADNEEDLE-STREET, LONDON.* 25

PAUL RABEY, JUN., AND CO., MINE AND RAILWAY SHARE AGENTS. *OFFICE—No. 12, COPTHALL-COURT, LONDON.* 26

MESSRS. LINTHORNE, JONES, AND CO., STOCK, MINING, AND SHARE AGENTS,

*** Every information will be afforded as to the markets and prices of the above, by application (post-paid) at their offices, 48, *THREADNEEDLE-STREET, LONDON.* 27

WILLIAM FOX AND SON, No. 53, CASTLE-STREET, LIVERPOOL, have always on SALE PIG-IRON, RAILWAY BARS, CHAIRS, and IRON of every description.—TIN PLATES, WIRE, &c. 28

MINING OFFICES, REMOVED FROM 16, CORNHILL, to 1, THREE KING COURT, LOMBARD-STREET.—Mr. R. TREDINNICK (of Cornwall), having established PRACTICAL AGENTS and CORRESPONDENTS in every MINING DISTRICT, whereby he obtains early and accurate information respecting MINES, proffers his services to capitalists and adventurers in the PURCHASE and DISPOSAL of SHARES. 29

MINING PROPERTY.—CAPITALISTS who are disposed to INVEST in CORNISH and FOREIGN MINES, will find the present opportunity very favourable for so doing. From large sums having been lately diverted from such investments for railway speculations, standard mines are now selling at prices that will pay the purchaser 20 per cent. per annum for his outlay. There are also other mines that are on the eve of paying dividends, which can be recommended with confidence.

Applications to be made to Mr. JAMES HERRON, mining agent, No. 3, Adam's-court, Broad-street, London. 30

MINING OFFICES, No. 1, ST. MICHAEL'S-ALLEY, *CORNHILL, LONDON.*

Messrs. WATSON & CUELL have received instructions to PURCHASE SHARES in West Caradon, West Maria, Wheal Mary Ann, Trewallack, Stray Park, Condurrow, and Wheal Gill Mines; and have FOR SALE, SHARES in East Pool, Wheal Bucketts, Trawney, Marke Valley, South Caradon, Holmbush, &c.

Mr. WATSON, F.G.S., having RETURNED from a MINING TOUR through the counties of CORNWALL and DEVON, will be happy to give any INFORMATION with regard to the MINES—some of which, at this moment, are paying 18 and 20 per cent. upon market prices. 31

MINES IN CORNWALL AND DEVON.—Mr. HENRY ENGLISH, of the Mining Record Office, 5, Shorter's-court, Throgmorton-street, having returned to the county of Cornwall, after a brief visit to the metropolis, again begs to tender his services in the Examination and Reporting upon Mines, during the next fortnight or three weeks—after which time he will return to town—having completed his tour in the west, which he purposes repeating in the course of three months from the present time.—Mr. Henry English has to acknowledge the confidence reposed in him on the part of many adventurers, and begs to assure those parties who may wish to avail themselves of the advantages attendant on his personal inquiries on the spot, that it will be his object so to direct his attention to the advancement of their interests, as to ensure their future commands. Mr. English is aided in the several districts by the advice and assistance of some of the most practical and intelligent miners, and thus is enabled to afford advice, besides furnishing reports and plans on the most correct data. Mr. English purposes visiting the western district in the course of a few days, but has, in a great measure, been delayed, from the pressure of business in the east, and the impracticability of completing his arrangements with satisfaction to himself, or the due protection of those interests confided to his care.—Letters, addressed to the Mining Record Office, 5, Shorter's-court, will be duly forwarded, and meet with the earliest attention. 32

A MINE AGENT, of considerable experience, acquainted with dialling, and some knowledge of assaying, is willing to ACCEPT an ELIGIBLE OFFER to GO ABROAD. The advertiser is 30 years of age, and an unmarried man.—References, as to character and ability, will be produced, and is kindly allowed to be given to P. N. Johnson, Esq., Hatton-garden, London, or at Hewton, Tavistock.—Letters to be addressed to "R. S.," Post-office, Liskeard, Cornwall. 33

WANTED, an experienced MINING CAPTAIN, to undertake the MANAGEMENT of a MINE, in full operation, in the neighbourhood of Tavistock. A liberal salary will be given, and first-rate testimonials will be required.—Apply to Messrs. Watson & Cuell, Mining Offices, 1, St. Michael's-alley, Cornhill, London. 34

WINDING-ENGINE WANTED.—WANTED, a SECOND HAND WINDING-ENGINE, of from 30 to 40-horse power.—Apply, with particulars, to G. S. Ford and Son, Bryndû Colliery, Pyle, Glamorganshire.

Dated Bryndû Colliery, Pyle, Glamorganshire, July 1, 1846. 35

MINING PROPERTY PROTECTION SOCIETY.—At a MEETING of the ADVENTURERS, PURSERS, AGENTS, and others interested in TIN AND COPPER MINES,

in the parish of ST. JUST, in Penwith, and the other parishes WEST of HAYLE, held at the GUILDHALL, in PENZANCE, the 16th day of July, 1846 (pursuant to notice),

"For the purpose of making such arrangements for bringing the produce of their mines to market, as that no 'LEAVINGS,' or other tin, should for the future *BE AT THE DISPOSAL OF ANY OF THEIR WORKMEN,*"

JOHN BATTEN, Esq., in the chair,

THE FOLLOWING RESOLUTIONS WERE AGREED TO: 36

1. That a society, to be called—

The Mining Property Protection Society,

be now formed, having for its object the twofold purpose of removing, as far as possible, the existing facilities by, or through, which mine adventurers are at present frequently defrauded—and of the more efficiently prosecuting to conviction offenders, by theft or otherwise, against their property.

2. As a means to the end contemplated, that no purser, manager, or other agent of a mine, permit any leavings, or other small parcel or parcels of tin, or tin stuff, to be placed at the disposal of any tinner or other labourer; but that henceforth all such leavings, tin and tin stuff, shall be brought to market by the adventurers themselves.

3. That, to give full effect to the above objects, rewards shall be offered and paid by the committee hereafter appointed—at any amount to be determined on by them—to such person or persons as shall give information of any breach of the last-mentioned resolution, or of any theft, or other crime or offence, committed upon the mining property of the subscribers—where such information shall lead, in the latter case, to the conviction of the offender or offenders, or where the committee shall consider it to have been well founded.

4. That the affairs of the association shall be under the conduct, regulation, and management of a committee—to consist of the pursers of the several mines, and of 10 other persons, to be chosen from the members for the time being of the association—five of whom shall be competent to act; and that such committee, for the year ensuing, be the following gentlemen—namely:

Mr. SCOBELL	Mr. T. COULSON
Mr. BORLASE	Mr. WEARNE
Mr. CARNE	Mr. J. RICHARDS
Mr. LEY	Mr. JAMES TREMBATH
Mr. S. PIDWELL	Mr. JOHN BENNETS, Jun.

who, or the major part of them, shall have power to supply any vacancy in their number by death or refusal to act.

5. That, in order to raise a fund necessary for the purposes of the association, a committee of five persons be now appointed, to decide on the amount to be contributed in the pound, on the value of the ores to be hereafter sold, until a sum of £50 shall be realised; and also to raise such further sums from time to time as may be necessary to meet the expenditure of the society; and that such committee consist of Mr. Batten, Mr. Davy, Mr. B. P. Batten, Mr. Pearce, and Mr. Higgs.

6. That inasmuch as the owners of lands within which mines are being wrought are interested in the objects of the society, they be requested not only to render their pecuniary aid, but also to discontinue the practice of granting what are called free setts, and of permitting labourers to work, and return the halvans of abandoned mines, and, for such and other purposes, to have the use of the stamps on their property—the benefit to be derived from which must at all times be inconsiderable, and as nothing compared to the disadvantages arising to the legitimate mine adventurers.

7. That there be appointed a treasurer to the association, and that Mr. Batten be requested to accept such office for the ensuing year.

8. That there be also a solicitor to the society, to aid and assist the committee in any enquiries they may find it necessary to institute, and to conduct any prosecutions which may arise out of such investigations.

9. That Mr. Roscorla be such solicitor, and that he be empowered, in any case of need, to avail himself of the professional assistance of Mr. G. D. John, in preparing for, or in conducting, any prosecution.

10. That these resolutions be inserted once in the *Mining Journal*, *Penzance Gazette*, *Cornwall Gazette*, and *West Briton* Newspapers.

11. That a copy thereof be sent to each of the tin smelters in the county—and that they be respectfully urged not hereafter to make purchases except from well-known agents of mines, or upon production at the time, of letters from such agents, stating the quantity of tin to be sold, and the mines from whence it shall have been brought.

JOHN BATTEN, Chairman.

Mr. Batten having quitted the chair

Resolved,—That the best thanks of the meeting are due to him for the readiness with which he convened it, and for his conduct in the chair.

SEYSSEL ASPHALTE COMPANY—CLARIDGE'S PATENT.—ESTABLISHED MARCH, 1838,

FOR WORKING THE MINERAL ASPHALTE ROCK OF PYRIMONT SEYSSEL,
A Bituminous Rock, situate on the Eastern side of the Jura.

PRINCIPAL DEPOTS:
ROUEN, MARSEILLES, AND STANGATE,
Surrey Side of Westminster-bridge, London.

The ASPHALTE OF SEYSSEL has been EXTENSIVELY USED, since March, 1838, for the following useful purposes:—

FOOT PAVEMENTS (public and other)
KITCHEN FLOORS
BASEMENTS—where it is essential to keep damps from rising
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				Civil Service.		Military Service.	
Age	First Seven Years.	Remainder of Life.	Age	One Year.	Whole Life.	One Year.	Whole Life.
	£ s. d.	£ s. d.		Rupees.	Rupees.	Rupees.	Rupees.
20	1 0 2	2 0 4	20	20	31	31	39
30	1 5 10	2 11 8	30	26	38	36	46
40	1 15 9	3 11 6	40	32	48	42	55
50	2 14 5	5 8 10	50	42	65	52	70
60	4 11 0	9 2 0	60	62	90	70	93

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REVIEWS OF THE WORK. 41

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Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY ..... Australian Trust Company—office, at Twelve.
Great Northern R'way (London & York)—Hall of Commerce, at One.
MONDAY ..... Australian Mining Company—offices, at Twelve.
Cameron's Steam Coal and Loughor Railway Company—office, at One.
TUESDAY ..... London and Greenwich Railway—offices, at One.
Reliance Mutual Life Assurance Society—offices, at One.
Worcester, Hereford, Ross, and Gloucester Railway—offices, at One.
WEDNESDAY ... United Mexican Mining Association—London Tavern, at One.
Royal Bank of Australia—office, at Twelve.
Patent Kamptulicon Company—offices, at Twelve.
Direct London and Manchester Railway—London Tavern, at Twelve.
Phœnix Gas Light and Coke Company—Bridge-house Hotel, Southwark,
Alliance British and Foreign Assurance Company—offices, at Twelve.
THURSDAY..... East Wheal Kitty Mine—Pearce's Hotel, St. Agnes, at Seven.
London Reversionary Interest Society—offices, at Twelve for One.
Universal Salvage Company—Hall of Commerce, at Three.
FRIDAY ..... Arigna Iron and Coal Company—offices, at One.
Bastenne Bitumen Company—offices, at Three.
SATURDAY .... Cornwall and Devon Central Railway—London Tavern, at Eleven.

[*The meetings of Mining Companies are inserted among the Mining Intelligence.*]

UNION BANK OF AUSTRALIA.

The annual general meeting of the proprietors of this bank, took place at their offices, in Old Broad-street, City, on Monday last, for the purpose of receiving the annual report, and transacting other routine business for the ensuing year. J. J. CUMMINS, Esq., in the chair.

S. JACKSON, Esq. (the secretary), read the advertisement convening the meeting, after which, the CHAIRMAN opened the business of the day by observing, that he would first read the report and statement of accounts, and he should afterwards be ready to answer any inquiries the proprietors might think proper to make concerning the state of their affairs. Mr. Cummins then proceeded with the report, which was to the following effect:—

The affairs of the Union Bank of Australia, at the close of the eighth year of its operations, are in a very satisfactory position, although the abundance of money which has arisen from the returning prosperity of New South Wales has rendered the colonists in a great degree independent of banking accommodation, and the opportunities at present afforded for employing the funds of the bank safely and profitably at the branches are few as compared with former years; and a very large portion of the bank's funds consequently remain in London, and is employed at such a rate of interest as is considered to be compatible with security and convertibility.

The directors have, however, some evidence of an improved demand for money in the colonies; and they expect that the revival of confidence now taking place will produce an active internal trade, and create, before long, a legitimate demand for banking capital. It has been stated in a previous report, that the branches in New Zealand had been almost reduced to small exchange agencies. They have, therefore, yielded scarcely any profit during the past year. The directors trust that a more favourable state of things will soon arise in those fine islands, and that they will yet afford a large and remunerative field for British enterprise. The bad and doubtful debts due to the bank from the commencement of its operations have been closely investigated by the respective managers at the branches, and the inspector; and their reports have been carefully examined by a subcommittee of this board. There have been variations during the past year, some estates proving better, and others worse, than the former estimate. The result, however, leaves the uncovered balance 24,559*l.* 3*s.* 5*d.*, which is rather less than the sum mentioned in last year's report. The loss which will arise upon this amount when finally closed, will form, as there stated, a charge upon the balance of undivided profits.

J. G. Jennings, Esq., the late manager at Hobart Town, has retired from the service of the bank, and entered upon commercial pursuits, with the esteem and respect of the directors. He has been succeeded by Mr. Clark, the late manager at Launceston, which has led to the promotion of Mr. Mann, from Geelong, to the management of the Launceston branch. Amongst the changes which have taken place in the bank's establishments during the year, the directors have to mention with deep regret, the decease of their late much-esteemed colleague at the London board, J. W. Buckle, Esq., and of Robert Kerr, Esq., one of their highly-valued local directors at Hobart Town. The vacancy created in the London board by the demise of Mr. Buckle has been provisionally filled, in conformity with the deed of settlement, by the interim appointment of William Wilson, Esq., a partner in the house of Messrs. Thompson Hankey and Co., of this City, who now offers himself to the proprietors for election. Robert Brooks, and James R. Todd, Esq., two of the present directors, retire by rotation, and likewise offer themselves for re-election on this occasion.

The directors cannot bring this report to a conclusion, without again making mention of the services of the inspector in the highest terms of approbation. The communications received from this gentleman, during the last few months, upon his return from a long and minute inspection of the branches, have brought every item of the bank's business, in the clearest and most satisfactory manner, under their notice, and all the arrangements made by him, during his tour of inspection, have met the entire approbation of the board. The directors have much pleasure also in expressing their satisfaction with the proceedings of their managers during the year, and in acknowledging the zeal and judgment manifested by the gentlemen forming the local boards in superintending the business of the bank. The directors now proceed to submit their annual statement of accounts, the general result of which enables them to declare dividends at the rate of 6 per cent. per annum on the entire paid-up capital of the bank, to be payable in London on the 3d of August, and in the colonies as soon as the inspector shall fix after receipt of advices.

On the conclusion of the report, the SECRETARY read the following statement of accounts:—

Statement of the Accounts to June 30, 1846.

LIABILITIES.

Bills payable			£85,055 8 4
Sundry balances			3,806 19 5
Bad debt reserve (balance)	£28,142 9 0		
Reserve fund (10 per cent.)	45,335 15 6		
Profit and loss	44,822 7 6		—118,300 12 0
			£207,162 19 9
Paid-up capital			820,000 0 0
Total			£1,027,162 19 9

STATEMENT OF PROFITS.

Balance of undivided profit at June, 1845			£43,568 14 5
To which add profits for year ending at the branches, 31st Dec., 1845, and at London office, 30th June, 1846	£56,059 12 4		
Deduct 1-10th for reserve fund	5,605 19 3		— 50,453 13 1
			£94,022 7 6
Deduct dividend paid at Midsummer, 1845	£24,600 0 0		
Ditto ditto Christmas	24,600 0 0		— 49,200 0 0
Balance of undivided profit at this date			£ 44,822 7 6

ASSETS.

Branch accounts (balance)	£270,211 1 7
Bills receivable	90,036 7 3
Investments, Government stock, and loans on security	648,524 13 6
Insurances, open policies, &c.	8,227 7 3
Cash	10,163 10 2
Total	£1,027,162 19 9

RESERVE FUND.

At June, 1845, as per statement	£39,729 16 3
Add to June, 1846, as above	5,605 19 3
Total	*£45,335 15 6

* Not included in the above balance of undivided profit, and held in addition thereto.

The CHAIRMAN said, that on looking over the paper placed in the hands of the proprietors, they would perceive the result of the year's operations had enabled the directors to add 5605*l.* 19*s.* 3*d.* to the permanent reserved fund, which now amounted to 45,335*l.* 15*s.* 6*d.*—(hear)—and 1300*l.* to the rest, or balance of undivided profits. Thus, taking into consideration the state of things which had for a long time prevailed in the colonies, the effect of which had been, as mentioned in the report, to prevent the bank from using its funds at the branches with as much profit as heretofore—under these circumstances, he thought that the proprietors must look upon their position as being very satisfactory. (Hear). There was scarcely any other topic in the report for him to touch upon, but any inquiries which might suggest themselves to the minds of the proprietors he should be most happy to answer. It was well-known to persons connected with the Australian trade, that the prospects of the wool trade were not so favourable this season as had been the case the two last years. The effect of speculation in the colonies having been to raise the price of wool, the over action of speculation would be checked in the only possible way, by the result proving unsatisfactory and unprofitable to those engaged in it. Such a check the chairman considered, instead of being injurious, would prove beneficial to the permanent trade. (Hear). In conclusion, he observed that the colonial interest generally was in a prosperous and sound condition, and he trusted they would see their business in the colonies daily increasing. (Hear). He might safely say, that on meeting the proprietors now, for the 16th time, they could speak with unhesitating confidence, so far as regarded the state of their bank generally. (Hear, and applause).

L. LEVY, Esq., in rising to propose the adoption of the report, congratulated the directors upon the satisfactory statement they had been enabled to lay before the proprietors—at the same time observing, that the amount of dividend alone was sufficient guarantee of their prosperity; and when he considered the statements which had been laid before the public concerning the Bank of Australasia, of which he was unfortunately a proprietor—when he considered how bad that was when compared with this, he thought that it was a matter of increased satisfaction and congratulation to the proprietors that their bank had shared a different fate. (Hear). This was altogether as satisfactory as the other was unsatisfactory, and there must have been good management on the part of the directors, under which circumstances he would beg most cordially to move, that the report be received and adopted unanimously. (Applause).

Mr. JAMES seconded the resolution; but, before putting it to the meeting, the CHAIRMAN again inquired, if any proprietor wished to interrogate him upon the subject; but no answer being returned, the motion was carried *nem. con.*

Robert Brooks, Esq., and James R. Todd, Esq., the two directors who retired by rotation, were then unanimously re-elected.

Mr. ROBINSON asked the chairman, if the deed of settlement compelled the directors to elect a new director on the demise of one of their body; or was it optional with them?—The CHAIRMAN said, that that was a question which he was not quite competent to answer, because it admitted of a doubt. Some of the directors considered that it was optional with them whether they filled up the vacancy or not, while others thought it obligatory; but which of the two opinions was right a lawyer alone would be able to decide. The directors, however, had considered they were acting on the safe side when they filled up the vacancy. (Hear.)—Mr. ROBINSON said, that the reason why he had asked the question was, because he considered it an objectional course. If the deed of settlement was imperative that the vacancy should be filled up immediately, it was quite another thing; but if, on the contrary, it was not imperative that the vacancy be supplied, he would tell the meeting why he considered it objectional. Of course, he meant to give his explanation upon general grounds, without reference to any particular case. His remarks were not to be considered as applying to the present instance in particular, but to any case that might happen in future. His objection was this—he considered that, unless there was an absolute necessity for filling up the vacancy, it ought to be left to the unbiassed choice and selection of the proprietors themselves, because it must be obvious to every one present, that the bringing forward of any other gentleman in opposition to Mr. Wilson, would be rather an invidious thing, after he had been chosen by the directors, and served upon the board some time. He mentioned these things with a view to call the attention of the directors to the subject, and that they might have the point cleared up before any other course was adopted, because, unquestionably, if the directors were not bound to fill up the vacancy, he should endeavour to induce the meeting, on some future occasion, to request the directors not to fill up a vacancy when it occurred, but to leave it to the proprietors at their general meeting. In his opinion, there could be no other ground to make it absolutely necessary than that the new director was absolutely necessary to assist the others in the discharge of their duty, and he did not for one moment suppose that such a reason could be alleged as the time was so short which had to elapse before the next general meeting. They would not be so free to choose them as they would have been, provided the directors had not fixed upon Mr. Wilson. He should, therefore, call upon them to consider the point as one of some importance, and to get the doubt cleared up as to whether it was or was not imperative upon the directors to fill up a vacancy immediately, and if they found it was not, he, for one, would certainly object to its being filled up in future.

The CHAIRMAN said, that he had no hesitation in giving it as his opinion, that it was made imperative by the terms of the deed. Irrespective of that, however, he thought that it might be highly desirable, when they looked at the trade of the Australian colonies, that the board of directors should seek out a suitable person; and at any time, if the proprietors wished to show that they did not consent to, or approve of, the choice made by the directors, it was perfectly competent for any other qualified proprietor to become a candidate for the office. (Hear). The inconvenience Mr. Robinson mentioned, was not, in his (the chairman's) opinion, of sufficient consequence to do away with a safe principle—namely, for the directors to look around them, and to find out a proper person to fill the office; whether it was obligatory or not, the deed of settlement distinctly vested that power in the board, and he considered it a safe one.

Mr. LEVY, with all due deference and respect to the worthy chairman, could not coincide in his opinion, which took the election entirely out of the hands of the proprietors, and placed it into the hands of the directors; so that if any gentleman made himself a little agreeable to the directors, he might calculate upon becoming one of their body. (Laughter).—The CHAIRMAN observed, at the same time it must not be forgotten, that it was in the power of the proprietors to express their disapprobation of the choice by rejecting the person whom they might select. (Hear). At the next general meeting, however, the question would, he hoped, be settled.

Mr. Wilson was then unanimously confirmed in the post to which he had been appointed by the directors.

The SECRETARY read the directors' declaration of a dividend of 6 per cent. per annum, which was received with much satisfaction.

R. HELME, Esq., rose with much pleasure to propose a vote of thanks to the directors for the efficient manner in which they had conducted the affairs of the bank during the past year; and, after briefly eulogising the excellent management which had been displayed, he gave way to Mr. ROBINSON, who was satisfied that the motion required no additional recommendation from him to to secure its unanimous and cordial approval.

The question was put, and carried without a dissentient voice—upon which The CHAIRMAN rose to return thanks on behalf of himself and his brother directors. He had not been sorry to hear the sentiments of the proprietors upon the question which had been broached, which would, of course, receive the consideration of the directors; and he should be prepared to state at the next meeting, how far it was obligatory upon the directors, or otherwise, to fill up a vacancy which might occur. (Hear, and applause).

After a vote of thanks had been given to Mr. Cummins, for his able services in the chair, the meeting broke up, evidently well satisfied with the proceedings.

COMMERCIAL BANK OF LONDON.

The general annual meeting of proprietors took place at the banking-house Lothbury, on Tuesday last. About 50 gentlemen, including the directors were present. JOHN TAYLOR, Esq. (of the firm of David Taylor and Sons, of Finsbury), the vice-president of the board of directors, occupied the chair, in the absence, from ill-health, of Richard Walker, Esq. M.P.

Mr. A. R. CUTBILL, the manager, having read the notice convening the meeting—The CHAIRMAN expressed his regret at the continued indisposition of Mr. Walker, their chairman, who had been obliged to leave London for a time. The directors had great pleasure in meeting the shareholders, and presenting them their report, which was clear and simple, and would be readily understood. To one or two points he wished to direct particular attention.—In the balance-sheet there was no charge for preliminary expenses; the whole had been paid off during the past year, and the account was now entirely closed. (Hear.) At the formation of companies of this description, considerable expenses were unavoidably incurred; these were defrayed by an annual deduction from the profits, which of course diminished the amount to be divided among the proprietors. It was, therefore, highly satisfactory to know that the charge no longer existed. (Hear.) The amount of net profit during the past year, was no less than 13,078*l.*, being 10 per cent. upon the paid-up capital of the company. (Hear.) Out of this amount, the directors proposed to declare a dividend for the last half-year, at the rate of 6 per cent. per annum. This, with the dividend, at the same rate, paid on the 31st of December last, would require the sum of 7042*l.* 6*s.* 6*d.* After allowing 1634*l.* 10*s.* for rebate of interest on current bills—bills which the bank at present held, and which were not due on the 30th of June last, there would remain an amount of 4410*l.* 7*s.* 2*d.*, which the directors proposed to add to the guarantee fund, making that fund no less than 10,066*l.* 19*s.* 8*d.* (Hear.) This was a real guarantee fund; it was separately invested in the Government securities, and was kept entirely distinct from the other parts of the bank's assets; and the interest accruing from it was added to the guarantee fund from year to year. He was deeply impressed with the great importance of keeping a large guarantee fund, and he rejoiced that the directors took the same view. (Hear.) It materially added to the confidence which the public reposed in the management of the bank, and it tended greatly to the advantage of the proprietors, by insuring steadiness of dividend, a most important point in all joint-stock companies. The expectations which the directors had held out on former occasions, of the continued progress of the bank, had been fully realised. Last year, the amount of the profits of the bank was 8700*l.*; in 1844, it was 6300*l.*; in 1843, 5100*l.*; while in the present year it was 13,087*l.* (Loud applause.)

Mr. CUTBILL read the report and balance-sheet—which appears in our advertising columns.—Mr. CHOWNE moved that the report should be approved, printed, and circulated among the proprietors. He warmly congratulated the proprietors on the flourishing state of their funds.

Mr. VALPY, in seconding the motion, said he did not know whether it had always been the practice of the directors to appropriate one-half or two-fifths to the guarantee fund. This might be well enough in companies where all the capital was paid up, as in the Bank of England; but where only one-fourth, of the capital, or something of that kind, was subscribed, he did not think it necessary always to carry so large a sum to this contingent; otherwise, they might go on with a dividend of 6 per cent., and no more for ever.

Mr. CHOWNE did not suppose there was any intention always to carry the same amount to the guarantee fund. It was extremely proper that that fund should be raised to a certain amount; and then, if they thought it was increasing too fast, they could easily reduce it. (Applause.) The resolution was then put, and unanimously adopted.

The CHAIRMAN said, he had now to declare, on the part of the directors, a dividend out of the clear profits of the company, for the half-year ending the 30th of June last, at the rate of 6 per cent. per annum, free of income-tax, payable on and after the 1st of August next. (Applause.)

Mr. J. KING proposed the re-election of Mr. John Taylor, the chairman, one of the retiring directors.—Mr. MUSKETT seconded the motion, which was unanimously agreed to.—The CHAIRMAN thanked the proprietors for the honour done him, and assured them that the interests of the bank would ever receive his best attention.—The re-election of Mr. W. S. Boyd was proposed by Mr. SEWEL, seconded by Mr. BACON, and agreed to *nem. con.*—Mr. BOYD briefly acknowledged the compliment.

Mr. W. R. COLLETT, M.P., proposed Major Beresford, M.P., as a director, in the place of Mr. Grimsditch, M.P., who had retired.—Mr. VALPY seconded the motion, which was agreed to.

Mr. BEEADON proposed Mr. Joseph Thompson, in the place of Mr. John Harvey, one of the retiring directors, who had requested to be withdrawn from the list of candidates. The motion was seconded, and unanimously agreed to.

Mr. THOMPSON expressed his sense of the honour done him, and his determination to promote to the utmost the interests of the bank.

On the motion of Mr. MCREA, seconded by a proprietor, whose name we did not learn, the thanks of the company were voted to the directors, for their

conduct during the past year.—The CHAIRMAN, in acknowledging the vote, said he had been connected with many directions, but never with one amongst the members of which more good feeling prevailed. To this he ascribed a considerable part of the prosperity of the bank, which he doubted not would continue. (Applause.)—Mr. J. KING said the proprietors ought not to overlook the important services of Mr. Cutbill, their manager. (Hear.) Whatever might have been the attention of the directors, unless they had had a manager to guide them in the various complicated affairs which necessarily came before them, their services would have been of little value. The report read that day showed what were the sound and excellent principles on which this bank was conducted; and all the proprietors must concur in thanking Mr. Cutbill for the able manner in which he managed the affairs of the establishment. (Applause.)

Mr. CHOWNE seconded the motion, and said he could bear witness to the great attention which had been paid by Mr. Cutbill from the commencement of the bank to the present time. (Hear.)

The CHAIRMAN, in putting the motion, said, he wished to add his own testimony, and that of the directors generally, to the great merits of Mr. Cutbill, who was, indeed, a most invaluable manager. They all knew with what energy and zeal he invariably strove to promote the interests of the bank—his tact and judgment, and his universal courtesy to the customers of the bank were no less well-known.—The motion was adopted with much applause.

Mr. CUTBILL, in acknowledgment, expressed his obligation to the directors, for the great kindness and consideration which had always been shown to him, and to the proprietors at large, for their ready appreciation of his services. He should always strive to pursue a steady and upright course in the management of the bank. (Applause.)—Mr. BLEADON moved a vote of thanks to the chairman, for presiding, which the CHAIRMAN suitably acknowledged, and the meeting then separated.

RICHMOND RAILWAY.—A special meeting of proprietors was held at the London Tavern, on Monday last, to confirm the arrangements made by the directors for the sale of the railway to the London and South-Western Company. The proposition was to make over the railway (which is to be opened on Monday next), for a sum of 195,000*l.* capital stock, or 3900 shares in that company, to be rateably distributed amongst the shareholders of the Richmond Company. After some discussion as to the inefficiency of the sum agreed upon, and the good prospects of the Richmond Railway as a speculation for themselves, the matter was left for further consideration, and the meeting was therefore adjourned.

DERBY, UTTOXETER, AND STAFFORD RAILWAY.—A general meeting of shareholders was held at the George and Vulture Tavern on Tuesday last, for the purpose of dissolution. The chair was taken by Mr. NASH, and a resolution for the purpose was proposed. The votes were taken, when there appeared upwards of 7000 for a dissolution of the company, which was passed accordingly. The accounts would enable the directors to return immediately 1*l.* 12s. 6d. per share; and, after the settlement of the pending action, there would be a probable return of 6s. more per share. Before the meeting separated, a vote of thanks was passed to the chairman and the committee of management.

PERTH AND INVERNESS RAILWAY.—A meeting of the shareholders, at the Thatched House Tavern, St. James's, on Tuesday last, resolved to dissolve—24,430 votes being given for dissolution, and none against.—The CHAIRMAN stated, that 48,000 shares had been issued, of which 46,089 had been paid upon.—The receipts amounted to 115,539*l.*; the whole liabilities of the company amounted to about 36,899*l.*—leaving a balance of 76,640*l.*, or about 33s. 4½d. per share. It is proposed to return 30s. per share immediately, and the balance as soon as the affairs are wound up.

MADRAS, NELLORE, AND ARCOT RAILWAY.—The half-yearly meeting of this company was held at the Gresham Rooms, Basinghall-street, on Tuesday last—Lord C. BEAUCLERC presided.—From the report, it appeared that no decision had yet been come to by the East India Company in respect to this railway. A sufficient sum had been sent to Madras to cover the preliminary expenses in that quarter, and one of the board would be sent over to superintend the complete survey of the line—the expense of which would be paid out of the deposits. The directors had reason to believe, that the sum required for the construction of the Indian railways—about 35,000,000*l.*—would be mainly found by the Indian capitalists themselves. The balance at the banker's was 723*l.* 9s. 9d.—After some conversation the report was adopted, and a vote of confidence was passed to the directors.

TRENT VALLEY CONTINUATION AND HOLYHEAD JUNCTION RAILWAY.—A general meeting of shareholders was held at the Guildhall Coffee-house, on Tuesday last, for the purpose of determining whether they should dissolve.—The chair was taken by the Hon. Capt. HOTHAM, who stated, that but little expense had been incurred since the last meeting, and the directors had since endeavoured to ascertain the sentiments of the scripholders as to discontinuing the project, for which they had found disposed about 20,000 shares. The balance-sheet showed the deposits to have amounted to 105,395*l.* 14s. 6d., and the expenditure to 16,698*l.* 14s. 0½d.—leaving a balance of 88,697*l.* 0s. 6d. A resolution was put for the purpose of dissolving the company, which was carried by a very large majority.—The CHAIRMAN, in reply to questions put, thought there would be an immediate return of 2*l.* 2s. per share.—Several scripholders expressed a desire to form a new company as soon as the present was wound up, which was supported by a large portion of the meeting.

DIRECT WESTERN REILWAY COMPANY.—A special meeting of the shareholders, adjourned from the previous week, an account of which appeared in our last Number, was held at the King's Head, Poultry, on Thursday, the 23d inst.—Alderman CHALLIS in the chair—who, in opening the business, again stated that the provisional committee were still ready to offer to divide the whole balance among the shareholders who had paid up, waiting themselves for what further sums might be obtained — represented the injurious effects a commission of bankruptcy would have on their interests, and that at best it would be a long time before a settlement took place. The scrutineers having completed their task, the CHAIRMAN announced the result to be—for dissolution 3785, neuters 10, and did not register 100, which, added to the 2985 who voted last week, gives several hundreds more than the Act requires to confirm the dissolution.

NORTHERN AND SOUTHERN CONNECTING RAILWAY COMPANY.—A meeting of the shareholders, under the New Dissolution Bill, was held at the London Tavern, on Thursday, and possessed interest, from the fact, that an injunction had been obtained to restrain the directors from drawing the deposits.—Mr. SCARD was in the chair; and a very noisy discussion took place as to the appointment of scrutineers, and whether any business could be discussed but the dissolution. An account was eventually given in, from which it appeared, that the receipts had been 33,650*l.*; and expenses, 23,744*l.*—leaving a balance of 9906*l.*; while the liabilities, subject to arrangement, amounted to 25,431*l.* Out of 4670 shares present, 4560 were in favour of the dissolution; and a resolution eventually passed, that the company should dissolve without bankruptcy.

OPENING OF THE RICHMOND RAILWAY.—The formal opening of this line took place on Wednesday last; when the directors and a numerous party of their friends, passed along in a special train. Though formed by an independent company, this line will be worked as a branch of the South-Western Railway, from which line it diverges a little to the east by Wandsworth station, proceeding by Wandsworth, Barnes, and Mortlake, to Richmond. At Wandsworth it is carried over the valley of the Wandle by a viaduct 1000 feet in length, consisting of 22 arches, three of which are each 70 feet in span. This is the principal engineering feature of the line, though there are various cuttings and embankments of a minor character between Wandsworth and Richmond. The works seem substantially constructed, and all the appointments, which are, in fact, the same as those of the South-Western, are most complete. The special train, containing the engineer, secretary, directors, and their friends, to the number of between 200 and 300, left the Nine Elms station at two o'clock. The line, which is about nine miles in length, was traversed in little more than 20 minutes; when it is opened to the public on Monday next, the regular trains will probably run in a still shorter time.

LUGGAGE INSURANCE ON THE GREAT WESTERN.—Within the last few days, by order of the directors of the Great Western, a system of taking charge of passengers' luggage has been adopted at the Bath station. A man, appointed for that purpose, has a room in which the articles are kept separate, and locked up. A printed receipt is given to the passenger who deposits luggage, and, in order to meet the responsibility and additional expense, a charge of 2d. upon each article is made by the company. As far as it has yet gone, the plan works well, and it is likely to prove a great accommodation.

RAILWAY LAW IN FRANCE.—It will be remembered that a catastrophe occurred on the railroad between St. Etienne and Lyons, on the 1st of March last, which cost the lives of eight persons. After a preparatory examination of the causes, the chief officer of one of the stations and the engineer were placed upon their trial before the Correctional Tribunal of Lyons, which has recently given judgment. The facts established were, that the chief of the station having received the order for an assistant locomotive engine, on account of an accident by which the one conducting the train was damaged, had, contrary to all the practice and regulations, taken the line of rails solely reserved for the convoys coming from St. Etienne to Lyons, by which he ran the risk of meeting the passenger train, which he went to succour. In fact, assistance having been beforehand supplied for the train which was detained, it was again sent forward, and was met by the locomotive brought by the station-master, who had forgotten to calculate that it was possible, by one means or another, the train might be enabled to resume its course: hence the catastrophe. The Court condemned the station-master to six months' imprisonment, and 500 fr. fine. The engineer under his orders, who had not taken the precaution to slacken speed on leaving the tunnel of Pierre-Benite, where the curve of the line was an impediment to trains perceiving each other, was condemned only to 500 fr. fine; he had, moreover, courageously manœuvred afterwards, at the risk of his life, to stop the engine.

MINING IN CORNWALL AND DEVON.—No. IV.

DISTRICT OF ST. NEOT.—This district lies west of the Caradon district, and the village is from five to six miles north-west of Liskeard. Thus much for its locality; while it behoves us, ere we enter into a description (brief though it be) of the mines, to say some few words of the saint whose name is associated, not only with the village and its church, but who, we are informed, on indisputable authority, first directed attention to the mineral resources of the district. It appears, from the history conveyed in one of the beautifully painted windows of the church, that St. Neot, the patron saint, was one who dealt with miracles,—or, perhaps, rather that miracles dealt with him; for no sooner is he bereft of his oxen, than deers and hares take their place. The fountain supplies him daily with fish, under the proviso that he shall eat only one, a mistake, however, arising by two being cooked on one occasion—while the benevolence and kindheartedness displayed by the saint, as illustrated in communicating to those amongst whom he resided, that rich mineral wealth was to be discovered in the Goonzion Downs, is to this moment recollected; and if we may give credence to the representations made to us, are the grounds on which many entertain the hope of one day realising a fortune. It appears that, for some kind act done towards the saint, he announced to one or other of his followers, and those who put faith in him, that on the Goonzion Downs would be found a mine of wealth, and that its spot would be readily ascertained by a feather being on the particular spot where the riches were embowelled in the earth. On the following morning, the moment wished for, when expectancy was at its height, and that riches appeared to be even within their reach, a pilgrimage was made towards the spot to which attention had been directed: St. Neot, whether by way of a practical joke or not, has never yet been determined, had, however, so managed matters, that, whether it was a heavy fall of snow in large flakes, or a number of geese that had been plucked, strange to say, a feather was found on every part of the hill, like blades of grass; and hence the difficulty which has ever since that day attended any attempt to discover the exact position or direction of the lode. True it is, that some of his believers have, whether by dowsing rod or other appliances and means, endeavoured to substantiate the truth and value to be attached to St. Neot's assertion, but hitherto without avail; while we have been assured, upon the first authority, that "where it is, there it is." We admit that it is somewhat difficult to determine the exact whereabouts, but many do not despair but that it will be yet revealed, and are not disposed to admit, that "hope deferred maketh the heart sick." On discussing the matter with an intelligent miner, and telling him we thought that, if the revelation of St. Neot was made known in London, a company could be formed who might discover the lode, we were met by the response, that he wished "they might get it." However, *Nil desperandum* is the miners' motto; and having said thus much of St. Neot, we will take a peep at the mines in his district. The mining operations here are limited to Wheal Sisters, the Wheal Mary Consols, Wheal Robins, Wheal Trevenna, and Hobb's Hill Mines. A stream of water is rendered available at the four former mines—three of which have no steam-power. The produce is insignificant, and the district cannot be said to be one of much interest, although (we are given to understand) one or two of the adventures hold out good promise. We shall take the several mines as they present themselves, proceeding from north to south. The mine on the extreme north is Hobb's Hill, one and a-half mile from St. Neot's; south of which one mile are the mines of Wheal Robins and Wheal Trevenna, the former being east of the stream, and the latter west. On the south of the village is Wheal Mary Consols,—and, on the same run of lodes, east is Wheal Sisters.

WHEAL SISTERS MINE.—This mine is situate in the parish of St. Neot, to the south-west of Berrydown Granite Hill. The sett extends 240 fms. east and west on the run of the lodes, and 180 fms. north and south, and is held under lease, of which term 17 years are unexpired—the dues being fixed at $\frac{1}{15}$th. The lords under whom it is held are Messrs. Sobey, Rundle, and others; the purser, E. A. Crouch, Esq., of Liskeard; and the managing agent, Capt. James Nance, of St. Neot, under whose immediate superintendence are the mines of Wheal Mary Consols, Craddock Moor, Wheal Pollard, and others. The management as regards that of the adventurers, independent of the agents named, is under the control of the majority of adventurers at the ordinary account meetings, whose decisions are carried out by the agent. The mine is divided into 256 shares, on which 25*l.* 15s. has been paid per share, or in all 6592*l.* The meetings are held every alternate month at Liskeard, when the accounts are submitted and passed, and the necessary provisions made for calls or dividends declared as the case may be; neither one nor the other, however, has been made for the past six months. The average monthly cost from the commencement is 227*l.*—while that of the last six months is 450*l.*; on the other hand, the average monthly returns for the past 12 months is 424*l.* The distance from shipping port is 12 miles, and the cost of carriage of ores 6s. 4d. per ton; coals, 3s. 3d.; and timber, 6s. 6d. There is a 36-in. cylinder steam-engine in course of working, with 9-ft. stroke in the cylinder, and 8 ft. in the shaft. Six lodes have been discovered in the sett, which is a continuation going east of Wheal Mary Consols; the direction or bearing of the lodes is 10° south of east, and north of west, with an underlay south, of from 1 ft. to 3 ft. in a fathom; the produce of the ore averaging 8 per cent. The nature of the lodes is quartz, peach, capel, arsenical mundic, with black and yellow copper ore. Two engine-shafts have been sunk, and one whim shaft, one perpendicular or downright, 65 fms.; and another of like depth in a diagonal direction; the third shaft is sunk perpendicular 30 fms. The adit levels have been extended 275 fms., and those under the adit 468 fms. The number of men employed is 69, and boys and "maidens" 40. The average rate of wages of miners is 59s. per month. The quantity of coal consumed monthly is about 23 tons. The strata is killas, nearly approaching the granite; the depth of adit at the north mine is 25 fms., and 15 fms. at the south mine. Six cross-courses have been discovered, bearing 8° east of north, and west of south.

WHEAL MARY CONSOLS.—This mine is situate in the parish of St. Neot, and adjoins Wheal Sisters on the eastern boundary: the extent is 600 fms. east and west, being the run of the lodes; and 460 fms. north and south. The term of the lease unexpired is 20 years, the dues being fixed at $\frac{1}{17}$th, and the sett held under James Michell, Esq. of Truro, and Messrs. Foster and Bolitho; the pursership devolves on E. A. Crouch, Esq. of Liskeard, and the management of the mine, as regards its practical details, on Capt. James Nance and Capt. Henry Taylor. The mine is divided into 256 shares, under the cost-book system, on which 20*l.* per share has been paid (or 5120*l.*), and meetings are held the last Wednesday in every alternate month at Liskeard. The mine only commenced working in September last, since which time four calls of 5*l.* each have been made. The total amount of labour, from the commencement, is 1639*l.* 12s. 9d.; and merchants bills, 4736*l.* 11s. 10d.—making a total of 6375*l.* 4s. 7d. The distance from shipping port is 12 miles; cost of carriage of coals, 3s. 6d. per ton; timber, 6s. 6d. per load. There is a steam-engine of 63-inch cylinder with 9 feet stroke, erected, and two water wheels, one 30 feet 6 inches diameter, with 4 feet 2 inches breast; and the other, 36 feet diameter, and 4 feet 8 inches across. Ten lodes have been discovered—the bearing or direction of which is 10° south of east and north of west, with an underlay south of 1½ to 2½ feet in a fathom: the nature of the lode is quartz, peach, mundic, and yellow copper ore. Five shafts have been sunk—viz.: the engine-shaft 90 fathoms deep, count-house 53 fathoms, Harding's shaft 37 fathoms; engine-shaft on Lampen lode, 40 fathoms, and ditto on south lode 60 fathoms. The adit extended 490 fathoms, and the measurement of the different levels under adit is 1140 fathoms—the number of men employed is 71, the average wages of whom is 57s. per month. The quantity of coals consumed is 45 tons monthly. The strata is clay-slate, or killas; depth of adit, 10 fathoms; two cross-courses have been met with bearing 10 degrees east of north.

WHEAL ROBINS.—This mine is situate in St. Neot, immediately contiguous to the village; the sett adjoins Hobb's Hill, which is on the north, and Trevenna on the west. The mine is now comparatively idle, it is said from several of the adventurers being in arrear, and not from the poverty of the mine, it being reported that a good branch of ore is going down in the bottom level. The mine is divided into 256 shares, and is worked on the cost-book system, 13*l.* per share having been called, or in all 3328*l.* Capt. W. Rule is the agent, and Mr. Samuel Phillips, of Liskeard, the purser. The sett is held under the executors of the late Mr. Robins, at $\frac{1}{15}$th dues, both for tin and copper. The workings, as we have already observed, are confined, the only active operations being at and above the adit level, which is 12 fathoms from surface, although the shaft has been sunk to a depth of 60 fathoms. There are two wheels erected— one a 26-ft. diameter, and the other 22-ft., with about 3-ft. breast; the one being applied to drawing, and the other to drawing and stamping, there being 12 stampheads. Tin is found in the backs, and copper in depth. The extent of the sett, on the run of the lodes, is about 450 fathoms; the distance from wheel to shaft about 100 fathoms; the water is kept to the 50 fm. level. Several lodes have been discovered, but the workings confined principally to one. It would appear that without "new blood," the "bal must be knacked," which, if report be true of its appearance at the bottom, would be, in the opinion of some, a source of regret.

WHEAL TREVENNA.—This sett immediately adjoins Wheal Robins on the west, and Goonzion Downs on the east; it is separated from the former by a branch of the Fowey River, from which water power is obtained for working the machinery required for unwatering the mines. The lodes, which run in a direction nearly east and west, and which are parallel to those in Hobb's Hill Mine, are a continuation of the Wheal Robins lodes. The sett is held under Mr. Gregg, for a term of 21 years, at $\frac{1}{15}$th dues. Capt. S. Bennetts is the agent on the mine, which is divided into 256 shares, on which calls to the amount of 3*l.* 10s. per share have been made. A water wheel of 30 feet diameter and 3½ feet breast is in course of construction, and a leat being formed to take up the water at a higher level near to the southern boundary. The mine is carried on under the cost-book system; the alternate monthly meetings being held at Liskeard, the last of which was on the 24th ult., when a call of 20s. was resolved upon. The expenditure for the past six months is about 270*l.* The shaft has been sunk from 4 to 5 fms. below adit, where the lode is about 20 inches big, with spots of ore; the water-course, or leat, with the wheel pit are on the eve of completion, and the wheel is expected to go to work on an early day, as soon as the water is brought home and the flat rods completed, and which is estimated to be of sufficient power to put the mine down 50 to 60 fathoms. There is nothing to observe on the operations, which may be said to be of a preparatory nature. The average monthly cost may be taken at 45*l.* to 55*l.*

HOBB'S HILL MINE.—This mine is situate in the parish of St. Neot, and the most northern of the mines working in this district. The sett extends nearly half-a-mile from east to west, and a mile and quarter from north to south, and is held under lease for 21 years, of which nearly 20 are unexpired, at the dues of $\frac{1}{15}$th, and held under — Rundle, Esq.: Mr. Richard Clogg, of Liskeard, acts as purser; and the management of the mine is under the direction of Captain Osborne. The general management of the affairs of the mine is, however, vested in a committee, consisting of nine adventurers, who meet monthly to audit the accounts. The mine is divided into 256 shares, on which 9*l.* 5s. per share has been paid (or 2368*l.*)—the total expenditure, up to the present time, being about 2450*l.* A call of 2*l.* per share was made on 23d June ult. The meetings are held at Liskeard. The average monthly cost is now about 70*l.*; the number of miners employed underground being 13; the average rate of wages of the shaftmen being about 3*l.* 5s., and of those in the ends 2*l.* 15s. per month. The distance of the mine from the Moorswater Canal is about 5½ miles. The cost of coal delivered on the mine is 1*l.* per ton; iron, 11*l.* 6s.; carriage of timber 9s. 6d. per load of 50 feet. The mine can be worked to any extent by water-power, as 8 or 10 wheels may be erected with the water-power at command. The present wheel, which is 46 feet in diameter, with 4 feet 3 inches breast, it is, however, calculated, is of sufficient power to prove the mine to a depth of 150 fathoms. A whim is attached to the wheel, which serves as a pumping engine, whim, and capstan. It is impossible to state the number of lodes contained in the sett—as, from the rocky nature of the surface, no measure can be taken for ascertaining their number by costeaning: it is, however, intended to put out a crosscut to intersect them, and prove their value. There are three lodes visible—two of which run about 2° north of magnetic east or south of west, the other about 40° north of east; the latter being the middle lode, and which, by its run, is calculated to intersect the main lode about 100 fms. west of the present workings. The northernmost lode underlays about 18 inches in a fathom, the middle lode about 2 feet in a fathom, and the south or main lode is perpendicular, or nearly so, sometimes inclining north and then again south, but, in 40 fms. sinking, has not varied 6 feet from the perpendicular. About 14 fathoms have been driven on the north lode, which is here from 2 to 3 feet wide, composed chiefly of spar, iron pyrites, and a little tin; the middle lode carries a hard spar, iron, and a little jack. The south lode has been driven on about 70 fms. at the adit level, and found to be composed of friable spar, prian, sulphate of iron, with a little grey and black ore; the width of the lode varies from 12 inches to 3½ feet. A 10 fathom level has also been driven on this lode, about 8 fathoms east, and 15 fathoms west of the shaft, where it was found slightly disordered, by a cross-course, and subsequently by an elvan course; but we understand that it is now assuming a very promising appearance, the workings having gone through the elvan course, the lode having resumed its regular size and character,—but the general opinion entertained is, that the workings are not sufficiently deep—the shaft is, therefore, now in course of sinking, with full power employed to effect that object; it is now about 5 fathoms below the 10 fathom level, or 41 fathoms from surface—the adit being 26 fathoms. It is intended to run down the shaft 20 or 25 fathoms below adit, when another level will be driven to prove the lode at that depth. There is but one shaft. The strata in which the present workings are is a hard granite—they being distant about 60 fathoms north of the junction of the granite with the killas. The sett extends into the killas. One cross-course only has been discovered, running nearly north and south, composed of a hard spar, with a little mundic in combination: it had the effect merely of heaving the lode about a foot. There is, however, strong reason to believe, that there is another cross-course to the west. A general meeting was held on the mine, on the 23d ult., when the accounts were submitted and passed, and a call made for its vigorous prosecution.

[*To be continued in next week's Mining Journal.*]

MANUFACTURE OF GAS FOR ILLUMINATION FROM WATER.—In the common method of manufacturing carburetted hydrogen from coal, resin, fat, or oils, a quantity of hydrocarburets are formed, which are useless and injurious to the gas, under that system of manufacture, while they are precisely those products which are richest in illuminating power. In a paper in the *Bulletin du Musée d'Industrie*, M. Jobard describes the result of experiments which were suggested to his mind, of dissolving these hydrocarburets in pure hydrogen, containing no illuminating power, and thereby rendering it capable of affording light, carbon being the source of the illuminating power. The whole of the year 1833 was devoted to the production of apparatus for charging the hydrogen with carbon, and which were at last eminently successful; and a commission was appointed to examine into the merits of the invention, who presented a report on the 4th of January, 1844, in which they state the gas burnt with a very white and brilliant flame, equal to 36 candles of 6 to the pound, and, issuing from a 12 hole Argand burner, gave at least double the light of the Brussels company's gas supply, in the same size burners, with holes three times the size. This gas was charged with carbonaceous vapours, by passing it through a cylinder, containing about two quarts of oil of gas tar, which was not exhausted at the expiration of eight days—it having been found that gas thus formed would lose its illuminating power by remaining stationary in gasometers or length of pipes, through the disengagement of carbon mechanically combined. The fact stated in Thenard's *Treatise on Chemistry*, that *gases combine at the moment of formation*, put M. Jobard in the right path: he now caused hydrogen gas, obtained by the distillation of water, to take up hydrocarburets produced by the distillation of coal gas at the moment of formation; and twice or thrice the quantity could be obtained than by the ordinary method: the necessity of purifying is done away with, and particularly when fish or other oils are employed—this is another great advantage. The combined gases contain carburets of hydrogen 57, oxide of carbon 28, and free hydrogen 15 = 100 parts. In experiments made with more than 1500 ft. of gas, watched for several hours, it was found that 111 ft. of gas was produced from every pound of oil.

RECOGNITION OF SCIENTIFIC MERIT.—The *Courier de Marseilles* states, that "Mr. Philip Taylor, sen. (formerly of London), one of our most distinguished engineers, has just been honoured with the cross of the Legion of Honour. The labours of Mr. Taylor, as a civil engineer, the vast establishment which he directs, the numerous machines which have been turned out at his workshops, are too generally appreciated not to justify a reward which thus comes to seek out true merit."

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—The lode in the 24 fm. level continues to improve; it now produces 1 ton per fm. (standing quite perpendicular). The 18 fm. level end west will produce about 2 tons per fm.; in the 18 fm. end east we have a slide, so that no lode is seen at present. The adit end east is producing good stones of ore in the gossan—lode about 2 ft. wide. I shall not be able to report upon the eastern part of the mine (Nangle's shaft) till next week, owing to some hinderances we have had in erecting flat-rods in Clon Mines. We have intersected some branches with iron pyrites, and small specks of lead.—Thos. Angove: July 18.

BEDFORD UNITED.—At Wheal Marquis there has been no lode taken down in the 80 fm. level east. The lode in the 70 fm. level east is 2 ft. wide, producing good saving work; a very kindly lode. In the stopes, in the bottom of this level, the lode is worth 18*l.* per fm.; there has been no lode taken down in the 58*l.* fm. level east. The pitches, on the whole, are looking favourable. At Ding-Dong there is no alteration in the 24 fm. level west. At Wheal Tavistock the lode in the 47 fm. level west is 2½ ft. wide; and in this level east the lode is 2 ft. wide, producing good stones of ore. In the 35 fm. level east the lode is 18 in. wide, composed of spar, mundic, and ore; this level west is suspended for the present. In the south engine-shaft there has been little or nothing done since my last, the men having been engaged in fixing lift, &c. In the adit level the lode is 18 in. wide, gossan, mundic, and spar, with stones of ore in places.—J. Phillips: July 21.

CALLINGTON.—Johnson's engine-shaft is sunk 7 fms. 2 ft. below the 112 fm. level; at this level, driving north, the lode is 10 in. big, composed of carbonate iron, intermixed with silver-lead ores—the ground is a little more favourable for driving. We have just commenced cutting ground in the level above, in order to sink a winze upon this end; in the south end the lode has not been taken down. In the 100 fm. level, driving south, the lode has much the same appearance as last week, the backs will set at 7*s.* in the 1*l.*; in the north end, the lode has not been taken down. In the 90 fm. level the ground is hard for driving, the lode has not been taken down; the wall of the same has a very promising appearance. In the 80 fm. level the lode is producing silver-lead ores. At the north mine, the ground is hard for cross-cutting towards the lode at the 100 fm. level. The increase of water, occasioned by cutting a cross-course in the eastern end at the 90 fm. level, has also been the cause of some delay in this part. In the 90 fm. level, driving north, which we have just now resumed, the lode is principally composed of quartz, much of the same character as the cross-course we are now driving through in the eastern end, and which, from what we have seen of its bearing, must be near this part, and will soon form a junction with, or intersect, the lead lode, producing silver-lead ores; in the south end the ground is a little more favourable for driving, the lode has not been taken down. In the 80 fm. level, driving south, the lode is small, producing rich work; the back will set at 8*s.* in the 1*l.* In the 70 fm. level north the lode is much disordered and split up, the air is also very deficient; we have suspended operations here, until a better ventilation can be effected; the copper lode at this level, driving east, is split in branches at this time, producing copper ores.—J. T. Phillips: July 20.

CONSOLIDATED TRETOIL.—The lode in Henwood's shaft has not been taken down since last reported. The lode in the rise, in the back of the 70 west, is 15 in. wide, producing good stones of ore. In the winze, sinking under the 60, on this rise, the lode is 20 in. wide, saving work. In the rise, in the back of the 70 east, the lode is 15 in. wide, a good orey lode, improved since last reported. In the winze, coming down on this rise, from the 60 fm. level, the lode is 2 ft. wide, which has also improved since last reported; in the rise, in the back of the 60 fm. level, west of Williams's shaft, the lode is much as last reported; the lode in the winze, coming down on this rise, from the bottom of the 50, is small and unproductive; the lode in the 50 fm. level, east of [illegible]n's shaft, is 1 ft. wide, producing good stones of ore; in the 50 fm. level, east of Henwood's shaft, the lode is 18 in. wide, opening ground that will set on tribute. We have sampled this day 43 tons of ore.—July 20.

EAST TAMAR CONSOLS.—At Whitson, the 40 fm. level, south of Hitchins's shaft, the lode is improving. At the 46 fm. level, north of ditto, the lode is 18 in. wide, saving work. At the 36 fm. level, north of ditto, the lode is 15 in. wide, good work. At Furzehill, the lode in Harrison's shaft is 2 ft. wide, producing good stones of silver-lead ore. At the 30 fm. level, south of ditto, the men are breaking very good work. Our pitches are looking as well as can be expected. We have shipped to-day 53 tons 5 cwts. silver-lead ore, and expect to rise 40 tons more this month.—B. Robins. July 20.

GREAT WHEAL MARTHA.—The lode in the 60 fm. level east continues small and unproductive. At the new mine, the lode in the 20 fm. level east has not been taken down since our last report. The south wall not having been seen in the western level for the last 15 fms. driving, we considered it expedient to make a cross drift south, and have already driven 2 fms. in this direction, through a part of the lode, consisting mostly of capel, containing a large proportion of mundic, with good stones of yellow copper ore. The lode in the 10 fm. level west, is 6 ft. wide, containing some good stones of ore, with indications of a promising character, the air, however, not being sufficient in this level to drive the end to advantage, we have suspended operations here at present, and have placed the men to stope a piece of orey ground in the back of the level, and we do hope it will produce a fair quantity of saving work. The tributers are working steadily, and are earning good wages. The new engine shaft is being sunk in favourable ground, and it is now 13 ft. below the adit level.—J. Prince; T. Penaluna.

GUNNIS LAKE.—At Chileworthy, the lode in Bailey's engine-shaft (now 10 fms. 6 in. under the adit level) is about 2½ ft. wide, composed of gossan and spar. The 10 fm. level, west of western shaft, is suspended for the present; in this level east the lode is 2 feet wide, producing stones of tin in places.—W. Richards: July 21.

HANSON MINES.—By way of report this week I beg to say, in the 22 fm. level, east of engine-shaft, on Stainsby's lode, the lode is 3 ft. wide, and a good course of ore in the bottom of the end for 3 feet high, and 20 inches wide, and from that to the back is thickly mixed with ore the whole breadth of the lode, as pretty a lode as can be seen in depth. In the bottom of 12 fm. level, east pitch is a good branch of ore; but in consequence of the water, not as yet drawn off by the 22, is idle. The men are raising ore in the bottom of the adit west of engine-shaft, on Stainsby's lode, at 12*s.* in 20*s.* The other tributers are still at work. We hope to sample above 30 tons of ore to-morrow.—Z. Williams: July 20.

HARROWBARROW OLD MINE.—The engine-shaft is now sunk about 6 fms. 3 ft. below the 33 fm. level; we are now sinking about 4 ft. per week. The 33 fm. level west has been driven about 2½ fms. since last setting-day, cost of driving 6*l.* 10*s.* per fm.; the lode is composed of spar, mundic, capel, and spots of copper ore—no improvement since last reported. Goodluck shaft is about 8½ fms. below the 28 fm. level; we expect to hole this shaft in a fortnight: some few stones of copper ore of good quality have been broken in this shaft, cost of sinking 4*l.* 15*s.* per fm. The level driving east from the deep adit is now under the last-mentioned shaft, and we have commenced rising against the same, at a cost of 3*l.* 10*s.* per fm. We are driving by the side of the tin lode, in the deep adit, at a cost of 9*l.* per fm.; we shall be able to take it down, and send same to grass, when the shaft is holed; that part of the lode, which we have taken down, is excellent work for tin. We calculate on having 3 fms. of lode uncovered by the time the shaft is holed to the deep adit, which we think will be worth more than the cost of sinking the shaft from surface to the deep adit, which is upwards of 40 fms.—B. Cooke; J. Kneebone: July 22.

HAWKMOOR.—The lode in the 15 fm. level, east of Hitchins's shaft, is about 18 in. wide, composed of capel, spar, and mundic, with stones of ore in places.—P. Richards: July 21.

HOLMBUSH.—Hitchins's shaft is sunk about 6 ft. below the 120 fm. level—the ground much the same as last reported; we are keeping the water in fork, at the rate of five strokes per minute. The ground in the 120 fm. level, west of Hitchins's shaft, in the cross-course, is not so favourable for driving, being hard capel, but we expect to get through it shortly—judging from the width of the cross course, as seen in the level above. In the 110 fm. level north, the lead lode is 4½ ft. wide, composed of spar, prian, and stones of lead, and the ground favourable for driving, and agreeable to the underlie and heave of the lode; we have about 4 fms. further to drive this level, to intersect the north copper lode. In the 100 fm. level, west of Hitchins's shaft (on the north part), the lode is 10 in. wide, composed of mundic, spar, and occasionally stones of ore; in the winze sinking below this level the lode is 20 in. wide, and worth 18*l.* per fm.; in the 100 fm. level, west of the lead lode (on the south part), the lode is 12 in. wide, composed of capel, mundic, and spots of ore; at this level, driving south, the lead lode is 3 ft. wide, composed of spar, prian, and stones of lead—the tributers in the back of this level are breaking some very good lead; in the same level driving north the lead lode is 3 ft. wide, composed of flookan, spar, and stones of lead. In the 90 fm. level, west of Hitchins's shaft (on the north part), the lode is 10 in. wide, producing stones of ore. The rise in the back of the 80 fm level, against Bray's shaft, is without alteration. In the 62 fm. level south the lead lode is 2½ ft. wide, composed of flookan, spar, and spots of lead, the ground being favourable for driving.—W. Lean: July 21.

TUCKERMARSH WOOD MINE.—*Beerferris, near the River Tamar, July 22.*—The adit level is driven 60 fms. south, on the course of the lode, which has produced good stones of ore from the commencement up to the present time. We have a winze sinking in the bottom of the adit; the lode in this winze is 2 ft. wide, 9 in. of which is rich work; we have also sunk the shaft 10 fms. under adit, and cross-cut to the lode, and find it about 3 ft. wide, composed of flookan, mundic, and ore; the leading part of the lode at this level is 1 ft. wide, very rich work for silver-lead ores, and of a promising appearance; we find this ore very rich for silver. We sampled a parcel of ore, in driving the adit level, which sold at 25*l.* per ton.—Thomas Sprague.

TAVY CONSOLS.—We have cut down the winze, and made it a good whim-shaft, to the depth of 12 fms., from whence we have commenced driving west; the shaft is about 10 ft. below this level, which we have left as fork, or a reservoir; the lode is larger than the end, and producing good stones of ore, but not much to save; the cost of driving is 6*l.* per fm. The adit has been driven about 4 fms. west of the lead lode, and is about 4 ft. wide; we have had a leader during the last 4 fms., which is now 1 ft. wide, and good saving work; the cost of driving is 3*l.* per fm.; the cross-course had a great effect on this lode to the east, or before we cut the cross-course we had a dry lode, with bunches of rich black ore, but to the west of the cross-course the lode is very wet, with the said leader of hard y[illegible]low ore and mundic, and every inch we proceed in the last-mentioned direction the lode improves. We are also driving north and south on the lead lode, the north end is producing good work for lead; the lode is about 2 ft. wide, the leady part of which is about 6 in.; the cost of driving 46*s.* per fm.; the south end is poor, and driving at 40*s.* per fm. We are rising from the adit to surface, on the course of the lead lode, for ventilation, at a cost of 30*s.* per fm. The copper ores sold on the 10th June fetched 7*l.* 4*s.* per ton. The lead raised by the tributers produced 13 in 20. There are now on the floors several tons of copper and lead ores. We purchased yesterday, at the Wheal Betsy sale, a water-wheel, 40 ft. diameter, and other materials, amounting altogether to about 200*l.*—B. Cooke; A. Martin: July 23.

TAMAR SILVER-LEAD.—The engine-shaft is sunk 11 fms. 4 ft. below the 145 fm. level, and the ground continues favourable for sinking. In the 145 fm. level the lode is 2½ ft. wide, unproductive. In the 135 fm. level the lode is 9 in. wide, rich work; in the winze, in the bottom of the 135 fm. level, north of the shaft, there has been no lode broken since last report. In the 125 fm. level the lode is 18 in. wide, composed of can and ore, of a promising character. In the 115 fm. level the lode is 1 ft. wide, producing work of a coarse quality. In the 105 fm. level the lode is 9 in. wide, composed of capel and mundic, with small strings of ore, but not rich. At North Tamar, we have put in a pent-house at the 60 fm. level, and commenced sinking the engine-shaft. In the 60 fm. level the lode is 18 in. wide—can, interspersed with ore.—J. Sprague: July 20.

TINCROFT.—The lode in the 90 fm. level east is 4 ft. wide, producing some good quality copper ore, worth 10*l.* per fm.; the west end, same level, is producing good stones of ore, and very promising. The lode in the 80 fm. level east is 20 in. wide, producing some ore; the lode in the 80 west is 2 ft. wide, producing 2 tons of ore per fathom, worth 5*l.* per ton—improving as we drive; the winze, sinking below this level, to the east of the shaft, is worth 10*l.* per fm. The lode in the 70 end east is worth 15*l.* per fm. for tin. The 60 end east is producing some tinstuff; these eastern levels are laying open ground that will work at a moderate tribute for tin. A winze, sinking below the 70 fm. level, to the east of the shaft, is worth 12*l.* per fm.; and another, to the west of the shaft, is worth 9*l.* per fm.; the lode in the 70 end west is 20 in. wide, producing some ore. The lode in the 60 end west is 20 in. wide, worth 6*l.* per fm. At Palmer's, the lode, in the 70 end west, is 2 ft. wide, worth 10*l.* per fm.; a winze, sinking below this level, is worth 10*l.* per fm.; we have two pitches working in the back of this level—one at 6*s.* 8*d.*; the other at 7*s.* tribute. A winze, sinking in the bottom of the 60 fm. level, at 7*s.* tribute, is producing fair quality ores; one of the pitches in the bottom of the 60, has very much improved since last report—indeed, most of our pitches are looking better now than for some time past; I expect we shall sample near 500 tons of copper ore to-morrow. In the south mine, the stopes, in the bottom of the 152 fm. level, to the east of the engine-shaft, is worth 40*l.* per fm. for tin; the stopes, to the west of the shaft, is worth 20*l.* per fm.; the lode in the 152 west is 2½ ft. wide, worth 12*l.* per fm. The lode in the 142 east is 3 ft. wide, saving work for tin. The lode in the 120 east is 3 ft. wide, worth 15*l.* per fm. The lode in the 110 east is 3 ft. wide, worth 15*l.* per fathom. The lode in the 100 fm. level, on south part, is worth 30*l.* per fm; the lode in the winze, sinking below this level, on same part, is worth 40*l.* All our pitches in this part continue to yield fair quality tinstuff. Our new shaft, in the north-west ground, is about 20 ft. from surface; in this shaft we have passed through two very promising branches of copper ore, which we consider very favourable omens.—W. Paul: July 20.

TRELEIGH CONSOLS.—At the 100 fm. level, east of Christoe, the lode is 2½ ft. wide, worth 18*l.* per fm.; the 100, west of ditto, driving north-west on the cross-course. In the 90, east of ditto, the lode is 3 ft. wide, worth 9*l.* per fm.; in the 90, west of ditto, the lode is small—no mineral; in the 90, east of Garden's, the lode is 3 ft. wide, worth 40*l.* per fm.; in the 90, west of ditto, the lode is 3½ ft. wide, worth 35*l.* per fm. or above. In the 80 north, at Good Fortune, we have driven 15 ft. in a disordered lode, and think it necessary to drive further on. In the 70, west of ditto, the lode is 4 ft. wide, producing good stones of ore. In the rise, above the 60, west of Symons's, the lode is 2 ft. wide, but very little ore. In the 50 cross-cut north we have cut the lode, but have not driven through—still driving north; in the winze, below the 50, the lode is 2 ft. wide, worth 5*l.* per fm.; in the 50, west of Symons's, the lode is 2 ft. wide, worth 4*l.* per fm.; in the adit, west of ditto, the lode is small—no mineral; the west shaft is sinking perpendicular in the country.—William Symons: July 18.

TREWALLACK.—The adit end south is as fine a lode as any one can see; the flookan in the centre of the end is 1½ ft., besides producing small stones of lead; this lode is such as you can seldom see, and promises great riches in depth; here we have set 5 fms., at 22*s.* 6*d.* per fm., for three men—one man to drive the cross-cut east, the air being dead in this part of the mine; also a shaft, midway between the engine and town place, to cut down and timber to the adit level for 3*l.* 10*s.*; after which, to sink 5 fms. on the month, at 2*l.* 5*s.* per fm.—to carry the same 7½ ft. long, and 5 ft. wide. This shaft is intended to come down to ventilate the two ends south, and to sink on the course of the lode, to follow the sump shaft, so as to be enabled to set tribute north and south of the said shaft. The air being at times bad in the 20 south, we have set this and the 20 north to one pair of men—so that, when the air is bad in the south, they may work in the north end. We have also set the cross-cut at the 30, to cut the lode, which we hope to accomplish in about a fortnight. We think, by putting a plunger at the 20, that we can safely calculate on going 10 fms. deeper. —Capt. Treswail, an old miner and shareholder, with Capt. Richard Ninnis, visited the works underground throughout, and expressed themselves highly pleased with the workings and appearance of the mine.—J. Williams: July 17.

UNITED HILLS.—In the 90 fm. level the lode in the eastern end is 3 ft. wide, 2 ft. ore of fair quality; in the western end the lode is 4 ft. wide, 3 ft. good ore. In the 80 fm. level, eastern end, the lode is 3½ ft. wide, coarse in quality. In the 70 fm. level, east of eastern shaft, the lode is 18 in. wide, producing stones of ore; in the west of James's shaft, the lode is 2 ft. wide, poor. In the 60 fm. level, eastern end, the lode is 18 in. wide, 1 ft. ore of average quality; in the west of Harper's winze the lode is 3 ft. wide, producing ore throughout of low quality. In the 50 fm. level the ground is a little improved for driving since last reported. At Wheal Charles, in the 50 fm. level the lode is 2 ft. wide, coarse in quality. In the 40 fm. level the lode at present is disordered by a cross-course. At Wheal Sparrow, in the 40 fm. level the lode is 18 in. wide, producing ore of low quality. At the 30 fm. level, in the stopes back of this level, the lode is 2 ft. wide, 1 ft. ore of fair quality; the lode in the winze has not been broken for the past week.—Thomas Trevenen; Robert Williams: July 21.

WHEAL AGNES.—I think the men in the adit level are getting near the lode, as the water is increasing. The lode in the north part of the mine is 2 ft. wide, producing good stones of silver-lead ore.—B. Robins: July 20.

WHEAL CONCORD.—At the 10 fm. level, east of Arnold's shaft, we have discovered a rich course of lead, 2 ft. wide, where we are sending up stones of ore to the surface,—from 1 cwt. to 2 cwts. solid ore has been brought up. This morning a stone of 3 cwt., but not quite solid, was raised, and is now to be seen on the mine. We have commenced sinking a new shaft 35 fms. east of Arnold's shaft, and have sunk 5 fms., and by sinking 5 fms. more they will be at the same level where we have cut the course of lead to the west. When this shaft is down to the 10 fm. level, we intend to drive west to meet the present level, to enable us to get on with our work more comfortable, as the air is so bad; this shaft, being perpendicular, will be more convenient for getting away the work than Arnold's shaft, by the means of being sunk on the underlay of the lode, and at the same time will be very useful for an air shaft. We are progressing with our engine-shaft as fast as possible; the plunger-lift is fixed, and working extremely well, and we have dropped 9 fms. below, which is in fork as far, but not quite secure as yet. The whim was put to work on Tuesday last, and continues to work night and day to endeavour to get the 20 and 28 fm. levels cleared as soon as possible, when I hope to set some tribute pitches. —B. Robins.

WHEAL TRELAWNEY.—The engine-shaft is 7 fms. 4 ft. below the 32 fm. level, in favourable ground. The lode in the 32 fm. level south, is 3½ ft. wide, and worth 20*l.* per fm.; in the same level north, it is 2½ ft. wide, and worth 18*l.* per fm. The winze sunk under the 22 fm. level, south of the shaft, is holed to the 32 fm. level. The lode in the 22 fm. level north is 2½ ft. wide, and worth 23*l.* per fm. The stopes generally are looking better than when I last reported. We sampled on Friday last, a parcel of lead ores, computed 99 tons.—Peter Clymo, Jun.: July 21.

WEST WHEAL JEWEL.—In the 115 fm. level, east of cross-cut, on Wheal Jewel lode, the lode is 18 in. wide, looking more promising for ore than when last reported. In the 100 fm. level, west on ditto, the ground is hard for driving—lode 1 ft. wide, producing but little ore. In the 85 west, on the same, the lode is 3 ft. wide, still worth 8*l.* per fm. In the 12 fm. level, east on ditto lode, the lode is worth 3*l.* per fm.; in the 12 fm. level, west of quarry shaft, on Tolcarne tin lode, the lode is 2½ ft. wide, worth 20*l.* per fm.; in the 12 fm. level, east of quarry shaft, on ditto, the lode is 2 ft. wide, worth 8*l.* per fm. No alteration in any other part of the mine since our last.—R. Johns: July 20.

[FROM CORRESPONDENTS.]

Condurrow Mine.—The improvement in this mine is almost general, and a considerable rise in the price of shares is anticipated. It is expected that they will have for the next two months sampling, 150 tons of copper ore, and 100*l.* worth of tin.

Among the discoveries which have been made in the Cornish and Devonshire mines during the past week, our attention has been particularly directed to that of Wheal Concord Mine, in the parish of South Sydenham, near Tavistock, from the several communications having been directed to us on the subject. It appears, soon after its commencement, about 10 years since, a bunch of lead was discovered on the western side of the cross-course, from whence 10,000*l.* worth of lead was extracted. In consequence of a claim, set up by the late Mr. Muskett, M.P. for St. Alban's, the mine was suspended, and the present company resumed it about two years since, and are now working in a spirited manner. The present discovery has been made in extending their 10 fm. level through the cross-course east, where they find a rich course of lead to remunerate their enterprising spirit. We are informed, that solid stones of lead, from 150 lbs. to 300 lbs., are in course of being raised from the lode, which is at present worth 50*l.* per fm., and every appearance of holding down. We most cordially congratulate the company on this discovery, and sincerely trust that others will follow in their several adventures.

East Relistian.—This sett has just been granted to a respectable party, who are about to erect a steam-engine thereon, for the effectual prosecution of the mine. It is situated on the eastern borders of the parish of Gwinear, and is traversed by several of the most productive lodes in that district. The present workings will be commenced by sinking a new engine-shaft about midway in a course of ore, which has yielded at and above the adit level, copper ores to the amount of 800*l.*, or thereabouts.

Old Whiddon Mines.—The miners employed in excavating and clearing out the works on these mines (near Ashburton) have found some valuable specimens of tin, and, from present appearances, this undertaking is likely to prosper.

West United Hills.—On Saturday, the 17th inst. (setting day), a winze was set to sink on the north lode, at 16*s.* per fm.; the general appearance of the lode is as last reported. On the south lode, the adit end is nearly to the valley, being about 8 fms. from the surface there, and was set at 50*s.* per fm.—the lode is very large, being about 7 ft. wide, and is now composed of mundic, black jack, lead, spar, and prian, with occasional stones of copper ore.

Wheal Benny.—A discovery has been made in this sett, in sinking on the Benny lode—some good stones of ore with mundic having been broken from the lode, at about 9 to 10 ft. from surface; the lode appears, according to the last reports, to be going downright—this, if it continues to do, or take an underlay south, will materially enhance the value of the sett. Shares, we understand, have changed hands at 8*l.* per share.

Wheal St. Cleer.—We have reason to believe that the operations here will be suspended this day, if the mine be not altogether abandoned. We fear this is but a prelude to others.

Wheal Concord.—We are given to understand, that a discovery has been made at the 10 fm. level east of the cross-course, in maiden ground—stones of lead from 2 to 3 cwts. having been broke within the past few days; the lode is from 3 to 4 ft. big, 2 ft. of which may be considered as solid ore. We shall have an opportunity of personally inspecting the mine in the course of the next week, when we shall give the result of our observations.

WHEAL FRANCO MINING COMPANY.

A meeting of adventurers was held at the mine, on Wednesday, the 10th ult., for the purpose of considering the report of Capt. Samuel Seccombe, who had been called upon to inspect the mine. That, as well as the reports of the resident captains (A. Barratt and Joseph Pryor), having been produced, and there being a *considerable difference* of opinion expressed therein, upon some very material points as regarded the future workings of the mine, it was resolved: —"That the meeting should be adjourned, for the purpose of considering these various reports, and determining upon the best course to be adopted; and to afford the adventurers some assistance in forming their own opinions thereon, it was agreed, that with the notices of adjournment, and extracts from the reports, as regards the points upon which difference of opinion exists, should be circulated amongst the adventurers." On furnishing these extracts, it appears necessary to add, that the reports of Captains Barratt and Pryor are of a date two months earlier than Capt. Seccombe's, and prior to the discovery of ore in the 32 fm. level, east of Boswarva's shaft, referred to by the latter; but this was verbally confirmed to the meeting of the 10th June by the resident captains; also, that this bunch of ore lies about midway between Boswarva's and Spry's shafts; and it should be further stated, that *all* the captains agree in opinion, that the cutting of the lode at Boswarva's or Spry's would be *equally* effective for draining the ground.

The following are extracts from the report of Capt. S. Seccombe:—"The 32 fm. level is driven east of Boswarva's, on the course of the lode, about 50 fms.; the end is now driving in a good course of ore, 5 ft. wide—worth about 30*l.* per fm.; and, from the length of the ore ground driven through at the 20 fm. level, over this end, a lasting course of ore may be reasonably calculated on. There are about 45 fms. from this end to the point where the lode is intersected by a cross-cut, driven south from Spry's engine-shaft; six men are employed driving on this course of ore; there appears to be a good lode going down in the bottom of this end, for many fathoms in length. The second, or Spry's engine-shaft, is about 90 fms. east of Boswarva's shaft, and is sunk about 39 fms. below the adit, or 7 fms. below the 32 fm. level.; at this depth the capels of the lode are intersected—ground hard for sinking. At the depth of 32 fms. below the adit, a cross-cut is driven south through the lode, which was found to be large, and spotted with ore, much of the same character as in the upper level, where it is not productive. A level is driven west from this cross-cut, on the course of the lode, to facilitate a communication of this level with the 32, driving east from Boswarva's shaft, which, from present indications, will lay open a valuable piece of ore ground; the lode has not been found to contain much ore near this shaft in the upper levels. A 32 fm. level is being driven east on the course of the lode; this will prove if the ore ground driven through in the 10 and 20 fm. levels continues in depth. A winze is commenced to be sunk below the bottom of the 20 fm. level, about 40 fms. east of Spry's shaft, and 8 fms. east of Burnell's whim-shaft, on a good lode. A great portion of the lode between the adit and 20 fm. level was found productive, and a large quantity of ore (about 2500 tons) has been sold, which realised about 12,000*l.*; the greater part of the ore sold was broken in the ground, and the productive parts of the lode between these two levels has been nearly exhausted, and it will very much depend on the continuation of the course of ore in the 32 fm. level east, as to the quantity of ore that can be sampled monthly, until laid open at a proper level. My opinion is, that this mine can be effectually worked by two shafts, one a sump or engine-shaft, and the other a whim or drawing shaft; and, taking into consideration, that as the lode lengthens west by the great cross-course in depth, and that Boswarva's shaft will not intersect the lode at less than 80 or 90 fms. below the adit, which is a considerable depth for a shaft to take the lode; and, from the nature of the ground, 2½ fms. per month can be sunk; and when at the depth of 50 fms. below the adit, a cross-cut should be driven to the lode, but, at the same time, keep the sump going for another 15 fms. lift. Spry's shaft being already in the capels of the lode, I should recommend its being sunk through, and then the further sinking to be discontinued, until it was required to be deepened, for the purpose of drawing the stuff. It appears, from the underground workings of this mine, that the very desirable object of proving the value of the lode in depth has not been carried out. Although the indications contained in the lode at the shallow levels were of a very encouraging character, and fully warranted that the sinking of the sump shaft should be continued; and, if so, the lode ere this would have been laid open at the 65 fm. level; if this had been done, and the lode proves unproductive, the extra expense to the shareholders would have been very trifling; and if, according to present prospects, the lode had proved productive, the shareholders would now be receiving good dividends."

The following is an extract of a report from Capt. Barratt:—"As for the future workings, I should recommend that Spry's shaft be continued sinking by six men at all working time, and that levels be extended east and west therefrom with all possible speed, and that the 32 fm. level, east of Boswarva's shaft, be also forced: in the meantime, winzes to be sunk below the 32 fm. level, between Boswarva's and Spry's shafts, as soon as Spry's may drain this part; and also that the 32 fm. level, west of Boswarva's shaft, may be driven back to the cross-course; and that the 10 fm. and 20 fm. level be driven east of Burnell's shaft."

The following is an extract from Captain Pryor's report:—"What I would recommend for the future working of the mine is the sinking of the engine-shaft to the 44 fm. level as speedily as possible, and continue driving the 32 fm. level east and west from the shaft. I would also recommend that Spry's shaft be suspended, and also the 20 fm. level, east of Burnell's; I would drive the 32 fm. level from Spry's shaft through the lode—and if there should not be any improvement, I would suspend that also."

Cornish Granite.—We learn that the present demand for large blocks of this very substantial material, in the construction of the national works in various parts of the kingdom, is quite unprecedented. The stone-cutters are in full employ; and from every granite district in the county, the supply is scarcely equal to the demand. In this immediate neighbourhood also work is on the increase. Extensive wharfs for shipping of stone are building at Portnavis on the Helford River, and there is every reason to expect, that, through the liberality of the landowners, a tram road will be laid down from the vicinity of the main rock, so as not only to afford a most material advantage for carrying the heaviest blocks of granite for shipment, but also by that means to open a source of traffic for the general benefit of the district.—*Falmouth Packet.*

Hint to Coalminers.—Cheap mixtures, made of substances capable of absorbing carbonic acid, such as glauber salts and lime, would prove useful to those who try to aid the sufferers after the explosion of a coal mine. Such a mixture, placed in a coarse bag, and applied to the mouth, would effectually absorb the carbonic acid, and prevent it exercising an injurious effect on respiration. Certainly, the want of such precaution in the case of the Jarrow explosion caused the death of a very meritorious man, Jacob Defty, the overman of the pit.—*De la Beche and Playfair.*

CONSOLIDATED COPPER MINES OF COBRE ASSOCIATION.

At a half-yearly general meeting of the proprietors of the association, held at the offices of the company, 26, Austin Friars, the 24th day of July,

RUSSELL ELLICE, Esq. (chairman), in the chair.

The advertisement convening the meeting having been read, the following report was read:—

REPORT.

Though the general meetings of this company take place every six months, it is more especially the duty of the directors, at the half-yearly general meetings of this portion of the year, to call the attention of the proprietors to the operations of the company for the whole year; and this they now do, by laying before them an audited account of the affairs of the company for the year 1845. By that account, it appears that the quantity of ore raised during the year amounted to 17,468 tons, and sold for 193,417*l.* 7s. 11d.—leaving a profit to the company of 10,325*l.* 3s. 9d. This profit would have exceeded 15,000*l.*, had not a considerable sum been paid to the owners of the San Jose Mine, and charged in the Cuba general disbursements of last year. This sum was paid as compensation for some ore unintentionally extracted from that mine, as mentioned in a former report. This amount of 10,325*l.* 3s. 9d., with the balance brought forward from last year, and deducting the income tax, make, together, the sum of 14,781*l.* 13s. 2d.—the balance of the account now presented. Out of that sum a dividend was paid to the proprietors in February last—leaving only 2731*l.* 13s. 2d. at the credit of the account.

With respect to the working of the mines for the present year, the directors are happy to say, that the quantity of ore raised to the 1st June rather exceeds the quantity raised to the same period last year—the produce of the first five months of 1845 being 6847 tons, and that of 1846, 7254 tons. The quality of the ore is nearly the same, but the price is not now so good—and it having been found necessary to send out a large steam-engine, which has been paid for, that, and some other extra, but unavoidable, expenses, falling on this year's produce, deprive the directors of the pleasure of declaring a dividend on the present occasion. The present prospects of the mines continue favourable, as may be seen by reference to the monthly mining reports, which are at all times open to the inspection of the shareholders; and the directors hope that the church ground question will, ere long, be completely settled.

The Santiago Company sent an agent out to Cuba, for the purpose of endeavouring to make some settlement of that question; and, accordingly, that agent applied to, and entered into an agreement with, our agents, by which this company agreed to cede to the Santiago Company about a 12th part of the ground. As the part of the ground so ceded is considered valuable, and this company had the sentence of a court in their favour for the whole ground, the directors at first were not at all pleased with the arrangement; but, on further reflection—though they are satisfied of the justice of their claim, and that there is every rational probability of the sentence in their favour being confirmed—still, considering the great delay and expense that further litigation might occasion, they now think that the agents have not acted unwisely in entering into this arrangement; and though the directors of the Santiago Company affect to repudiate it, there is little doubt but that their agent had ample powers; and your directors have intimated to the directors of the Santiago Company, their determination to uphold and abide by the agreement.

There still remains a third party, who have put in a claim for part of the ground, but it is not considered that their claim is of any validity, as that it can occasion any serious impediment to the company getting a final decree in their favour. The directors therefore hope, that at their next meeting in Jan., they will be able to congratulate the proprietors, on being in possession, and working the ground. The directors continue to devote their best attention to introduce every practicable economy into the expenditure at the mines, and an experiment is now about being made on the company's wharf, at Swansea, for smelting the dust ores, which, if successful, will effect an immense saving to the company. It is the duty of the directors, again to bring under the notice of the proprietors, the zealous exertions of their much respected friend Mr. Arrieta, at the Havana, who continues unremittingly to watch over the interests of the company, and for which he will no doubt receive the cordial thanks of the proprietors. The directors are also happy to express their satisfaction with the general management of their agents, Capts. William and James Reynolds, who, it appears, from a strict analysis of the large expenditure in Cuba, have certainly succeeded, during the past year, in materially reducing that expenditure, and this acknowledgment the directors hope will stimulate them to further exertions in the same direction. With the general good conduct and attention to their duties, the directors likewise have pleasure in mentioning Captain Maynard, and the other sub-captains, and the miners generally.

It was then moved, seconded, and carried unanimously:—

"That the report now read be received and adopted."

"That the thanks of this meeting be given to Mr. Arrieta, for his continued good offices and attention to the best interests of the company."

"That the thanks of this meeting be given to Captains William and James Reynolds, for their general good management, and the proprietors beg to express their expectation, that they will continue their best exertions for the reduction of the expenditure."

"That this meeting is well pleased to acknowledge the favourable mention of Capt. Maynard, and the other sub-captains and miners generally."

"That the thanks of the meeting be given to the chairman and directors, for the able and zealous manner in which they have attended to the interests of the company."

COPIAPO MINING COMPANY.

At a special general meeting of shareholders, held at the company's office, on Thursday, the 23d inst.—HENRY HARMAN, Esq., in the chair—the advertisement calling the meeting having been read, John Deacon, Esq., and Thomas Richardson, Esq., directors, were re-elected, and John Labouchere, Esq., was re-elected an auditor.

The CHAIRMAN then read the following report:—

REPORT.

Since our meeting in April last, two vessels have arrived at Swansea, for the company, bringing together 820 tons of copper ore. The cargo of the *Elizabeth Beynen* was sold on the 10th of June; it averaged 26¼ per cent. of copper, and realised 19*l.* 17s. 6d. per ton, leaving a small profit. The *Dorothy Gales* arrived at Swansea on the 14th inst., after a very rough passage; on her voyage it was found necessary to throw some of her ores overboard. The cargo has not yet been assayed. The *Auricular* was expected to arrive at Copiapo in all the month of May last; she will load about 500 tons of ore. The other vessels, chartered by the company, have sailed for their destination, and will be loaded in succession; they will bring about 700 tons of ore. The last advices from the manager at Copiapo are dated 1st May, bringing the mining captain's report (dated 4th April), copy of which has been laid in the office. The raising at Checo and San Pedro Mines during the month of February, amounted to 92 tons of copper ore; the quality of the San Pedro ore is represented to be superior. The total quantity of copper ore lying in the valley of Copiapo, on the 1st May last, was about 2370 tons—of these 700 tons were at the port ready for shipment. From the Morado Mines, about 270 tons of copper ore had been carried down to the beach for shipment, up to 1st March. At the Pampa Larga Silver Mine, the mining captain states, that they had made what was considered an important discovery—namely, the existence of silver below the arsenical course of ore—the vein varying from 1 ft. to 15 in. in width, was composed of a class of ore that was expected to pay well on reduction. No material quantity of ore has been dressed since last reported, although several tons have been extracted.

It was the intention of the manager, in future, to send down to the amalgamation works parcels of 40 to 50 tons each, in order that the ores might be properly assorted, and it was expected that this mode would produce a better result than former trials. The balance of the company's share of expenditure at Pampa Larga, up to 31st December last, amounted to 2750*l.* This mine still continues to excite the notice of several individuals well acquainted with mines in that district, some of whom have been anxious to purchase a share in it. They have remarked to the company's agents, that they ought to to employ a much larger of miners. The cash statement and balance-sheet of the company's affairs were laid in the office.

The report having been received and adopted, the thanks of the meeting were then voted to the chairman and directors.

CARADON MINING COMPANY.—The usual two-monthly meeting of adventurers was held at Webb's Hotel, Liskeard, on Wednesday, the 15th inst., when the accounts for the two months ending June, amounting to 368*l.* 16s. 2d., were submitted and passed; the cost for May month being, for labour, 105*l.* 0s. 11d.; and for June labour, 109*l.* 5s. 6d.; the bills for materials for the two months being 154*l.* 9s. 9d.—these items, added to a balance of 801*l.* 14s. 7d. to the debit of the adventurers at a preceding meeting, give, together, a total of 670*l.* 10s. 9d. On the credit side of the account is amount received on call of 2*l.* per share (in all 15*l.* per share), 512*l.*—which, deducted from total expenditure, leaves a balance against the mine of 158*l.* 10s. 9d.—the total arrears of calls being 152*l.* It was resolved,—That a call of 2*l.* per share be made, payable immediately at the Devon and Cornwall Bank, Liskeard. The following report from Capt. S. Seccombe was read to the meeting:—"The present depth of the engine-shaft, is 36 fms. below the surface, being 19 fms. from the surface to where our adit level will come in, 16 fms. from that point to the 35 fm. level, and 1 fm. below the 35. The shaft is sinking by 9 men at 20*l.* per fm. The ground has lately improved for sinking. At about 19 fms. from the surface, a very promising lode was intersected, containing good stones of rich copper ore, with gossan, and soft spar, underlying north, about 3 ft. in a fm. A cross-cut is driving north, at the 35, by six men, on a cross-course, at 6*l.* per fm., to intersect this lode, which I expect will be done in four weeks; and I fully expect, from its promising character where it went through the shaft, to find it productive at this level. Near the south side of the shaft, at the 35 fm. level, a lode has been intersected, varying from 1 ft. to 2½ ft. wide, containing beautiful gossan, soft spar, and peach, intermixed with spots of grey ore and native copper, underlying north, about 2 ft. 9 in. in a fm. We are driving west on its course, by six men, at 4*l.* 15s. per fm.—we have driven 4 fms., and I calculate in driving 16 fms. further west, to intersect another cross-course, which we met with in driving the adit level east. From the encouraging appearance of this lode, so far as it has been driven on, I think it will be found to contain large courses of copper ore when laid open at a deeper level. A cross-cut is also driving south, at the 35 fm. level, by six men, at 9*l.* per fm., to intersect the lodes south from this point: 3 fms. have been driven, and I calculate there are about 10 fms. more to drive, to intersect the next lode, which was found to be very promising where opened by costeaning. I consider it advisable to sink the shaft 15 fms., before we again cross-cut the lodes, making the whole depth 50 fms. below the surface. The adit level is not yet holed, there being about 13 fms. of ground more to drive to do so; the ground having become harder has prolonged our making this communication. The water is very easy in the shaft, not being more than one stroke per minute for the engine, which works remarkably well; it is at present consuming about 400 lbs. weight of coals in 24 hours. I think our engine will be found to give much satisfaction to all parties concerned."

HARROWBARROW CONSOLS MINING COMPANY.—At a general meeting of adventurers, held at Mr. Carne's, Plymouth, on the 10th inst.—C. CREWS, Esq., in the chair,—it was resolved, "That the costs for April and May months last, showing an expenditure of 141*l.* 2s. 11d., having been examined and found correct, be passed and signed—the total expenditure being, up to this time, 1287*l.* 3s. 9d."—It was also resolved, by a majority of 276 shares, "That it is the opinion of this meeting, that it is desirable and prudent this company should suspend operations on this mine for three months—hoping that, by that time, the Harrowbarrow Old Mine will have proved part of the lodes running through this sett; that a list of the machinery and materials now on the mine be made, and that the salaries of the agents be stopped."—"That this meeting be adjourned to Friday, the 9th Oct., to be held at Mr. Carne's, Plymouth."—A call of 5s. per share was made, payable before September next, to the purser, to meet the June month's costs, and the other liabilities of the mine.

WEST WHEAL ROSE MINING COMPANY.—An adjourned meeting of shareholders was held at the Vesta Coffee-house, London House-yard, St. Paul's Church-yard, on Wednesday last—JOHN SHEEN, Esq., in the chair.—The CHAIRMAN briefly adverted to the object of their assembling, and called upon the Secretary to read the minutes of the last meeting (held on the 1st inst.), which would then place the subject before them for discussion. The SECRETARY read the following minutes:—"That Capt. Vivian be requested to take into consideration the propriety of taking a reduced salary, under the present circumstances of the mine.—That a call of 5s. per share be now made, payable in three months from the present time.—That this meeting be adjourned to the 22d July inst."—The CHAIRMAN called upon Capt. Vivian to furnish the company with an account of his proceedings at the mine, as well as to the amount of salary he would be willing to accept for his services, as they considered 12*l.* 10s. per month more than the mine could afford in its present infant state and prospects, preferring, at the same time, that the amount of remuneration should be named by Capt. Vivian himself.—Mr. THOMAS SMITH stated, he had known Mr. Vivian (in London) for many years, and believed him to be a man of strict honesty and integrity; but he knew nothing about his abilities as a miner, or the remuneration which mining captains generally received throughout the county of Cornwall; still he considered Capt. Vivian's wages excessive.—Capt. VIVIAN did not consider he was receiving too much for his services, when it was remembered that he had a vast deal of travelling, anxiety, and responsibility upon him, and particularly as he had no clerk to keep the accounts of the mine; at the same time, it should be borne in mind, that he had not received a fair compensation for the mine, judging from what he heard had been given for other setts.—Mr. J. MACARTHEN explained, that the agreement with Capt. Vivian for the purchase of the sett was, that he should receive out of every 100 shares taken six paid-up shares, so that of the whole 2000 shares, into which the mine was divided, Capt. Vivian will be the holder of 120 paid-up shares—*this* was all that Capt. Vivian asked for the purchase of his interest in the mine, and it had been agreed to. Looking at the cost-sheets and the amount expended for labour, scarcely anything having been done in the month of June, and not more than four, or six, or eight men being at work in some of the previous months, the shareholders thought that 12*l.* 10s. a month was too much to pay for the superintendence of that number of men. The shareholders hoped, that Capt. Vivian would meet their wishes, by a proposal emanating from himself, as the shareholders had dealt with him liberally in the first instance, by giving him all he had asked for the mine, and engaging him as manager of the mine also, at the salary named by himself. This was a sufficient pledge to Capt. Vivian that, as the mine progressed, the shareholders would then deal as liberally with him, as the success of the mine warranted.—Capt. VIVIAN stated, he was in the hands of the meeting, and requested the shareholders to suggest what they would wish him to do.—After some discussion, in which Messrs. Munton, Witcomb, Hesse, Cade, Chubb, and others, took part, on Capt. Vivian intimating that, if the meeting desired it, he was willing to reduce his salary to 8*l.* per month.—It was then resolved, that Capt. Vivian's salary should be for the future 9*l.* per month.—The meeting was then adjourned (being a late hour) to Monday evening next, at seven o'clock, at the same place.—The thanks of the meeting were most cordially given to the chairman.—[We were much pleased with the candid manner in which the directors answered the questions put to them by the shareholders, and also by their submitting for inspection all the books, correspondence, and accounts relating to the mine.]

WHEAL ACLAND MINING COMPANY.—At a meeting of adventurers, held at Newlyn, on the 10th inst., the accounts—showing a balance against the mine of 4*l.* 10s. 6d.—having been examined and allowed, a call of 1*l.* per share was made. It was resolved, that the present adit level, at Trendrain, be continued westward, so as to intersect the Metha lode.

WHEAL LUDCOTT MINE, ST. IVE.—The two-monthly meeting was held at the Red Lion Inn, Liskeard, on Thursday, the 16th inst., when the accounts for the preceding two months were submitted and passed, and a further call of 10s. per share was made.

RECORD OF MINING REPORTS.

SIR,—Having adopted the plan of cutting out from your Journal weekly, the reports on the several mines in which I am interested, and having them pasted in separate books, according to the different projects, I have found much utility attending this course—as I can at a moment refer to the weekly reports of any one particular mine, for the past 12 months, and see them in print. This enables me to compare the reports of one week with another, and so to ascertain how far the prospects held out by the agents have been realised. I think if this course were generally pursued, shareholders at the meetings, which are so *seldom* held, would come prepared, with a digest of the proceedings of the past few months, which I am sorry to say, in many cases I could name, is not to be found in the reports of the directors. Some useful questions might be put, if not solved, and we should meet more as men of business, than as puppets, which it appears, in more than one instance of late, we have been treated like. I do not wish you to consider, by thus cutting up your columns for the weekly reports, I neglect the more important information to be found in them, as I subscribe for one number expressly, for binding a valuable record of useful mining information.—MERCATOR.

MINING CORRESPONDENCE.

SIR,—In common with many of your readers, I have to complain of the insertion of correspondence, or reports, in the columns of your Journal, which are ordinarily treated as *official* communications, without the names of the writers being appended. Surely, there can be no objection to the signatures being given, for I presume you are not in the habit of giving publicity to any sort of report which may be furnished to you, without knowing the channel from whence it comes, and in such case I think your readers are entitled to the like information. I am led to make these remarks, as I find some of your reports use the "*I*" very frequent, in "I believe this," and "I think that"—if we knew who were the writers, we should know how to value their opinions. "*I* (at least) think this."—AN ADVENTURER: *London, July* 23.

Some very favourable indications have taken place in Wheal Exmoor Eliza, on Exmoor Forest; some beautiful stones of ore and gossan from a lode about 24 ft. wide, have been forwarded to the adventurers here, and their expectations are very sanguine as to the success of the undertaking.—*Plymouth Journal.*

DIED,—On Tuesday the 14th inst., in the 28th year of his age (and only four months after the decease of his father), Joseph Lochlin Miller, Esq., C.E., author of a treatise entitled *The Principles and Practice of Road Engineering*, and late of the island of Ceylon, from which he recently returned with his health much impaired by the climate. He was a young man of extraordinary mathematical attainments and brilliant professional abilities, of a most amiable, frank, and engaging disposition, and is deeply and deservedly lamented.

INTERESTING TO GEOLOGISTS.—A discovery has within the last few days been made on Raploch farm, which adds another to the many proofs that the now fertile fields of the Carse were at some remote period covered by the ocean, and Stirling, Abbey Craig, Craigforth, and other basaltic rocks, washed by its turbulent waves. Workmen have been engaged for some time back in removing the surface soil from a bed of freestone rock, intended for the construction of the new bridge over the Forth for the Scottish Central Railway; and while prosecuting their labours, they came upon a stratum of shells within a very few feet of the surface, which consists entirely of those shells common to the sea shore of the present day, and amongst which we perceived numerous specimens of the mussel, oyster, cockle, and other shell fish.—*Stirling Journal.*

IMPORTANT TO MINE PROPRIETORS—GASES AND EXPLOSIONS IN COLLERIES.

An important document—the result of a commission appointed by the late Government, for the purpose of obtaining information as to the best means of preventing, or at least of mitigating, the fatal effects which are so frequently the result of the generation of the obnoxious gases in coal mines—has just been published. It is the production of Sir H. De La Beche and Dr. Lyon Playfair. After referring to the generation of carburetted hydrogen, or fire-damp, with which description of gas the miner has chiefly to contend, it says—

The escape of fire-damp is generally influenced by the barometrical state of the atmosphere, especially when much of the gas has become accumulated in the wastes or goafs. This is more or less experienced in all pits; but one striking case was pointed out to us by Mr. Jobling, of Jarrow Pit. In a pit of which he is the viewer, the gas issues from cracks in the roof of the seam, and in low states of the barometer is evolved in considerable quantity. When the barometer is high, instead of this issue of gas, there is a sensible current of air which enters into the cracks. When this inward current takes place, the pit is worked with naked candles; but when the evolution of fire-damp commences, Davy's lamps are employed. Assailed in this manner by a gas which, when mingled with atmospheric air in proportions, is highly explosive, a knowledge of its exact composition becomes a subject of great importance to the collier, since effective precautionary measures, more especially as regards the lights employed, must necessarily depend upon such knowledge. It is unnecessary to describe in detail the methods which we pursued in the analysis; it may be sufficient to state that we adopted the methods mentioned in a report to the British Association on the analysis of gases by Professor Bunsen, and one of us. We may, therefore, at once tabulate our results, merely stating that we have devoted much attention to this investigation, so as to remove doubt upon a subject so important to the interests of the public.

GASES.	Wall's End, from Pipe on Surface.	Wall's End, Benham Seam.	Jarrow, Benham Seam.	Hebburn, Benham Seam, 161 fathoms deep.	Jarrow, Low Main.	Jarrow, 5-4 Seam.	Gateshead, Oakwell Gate, 5-4 seam.	Coal 24 ft. below Benham Seam, Hebburn Colliery.
Carburetted hydrogen	92·8	77·5	83·1	86·0	79·7	93·4	98·2	92·7
Nitrogen	6·9	26·1	14·2	12·3	14·3	4·9	1·3	6·4
Oxygen	0·0	0·0	0·6	0·0	3·0	0·0	0·0	0·0
Carbonic acid	0·3	1·3	2·1	1·7	2·0	1·7	0·5	0·9
Hydrogen	0·0	0·0	0·0	0·0	3·0	0·0	0·0	0·0

The general result of this examination is, that the only inflammable constituent present in the explosive gas of colleries is carburetted hydrogen or fire-damp; there is not a trace of oleliant gas, and only in one out of the eight gases analysed is there hydrogen. It follows from the previous analysis, that the issue of fire-damp into the atmosphere of a mine must deteriorate the air, by adding an undue proportion of nitrogen gas; in one case, this gas amounts to 21 per cent. During an explosion the oxygen necessary to the respiration of the workers is removed by uniting the carbon with the fire-damp, and thus producing carbonic acid, a gas most fatal to animal life. This carbonic acid, mixed with the residual nitrogen of the atmosphere, and that present in the explosive gas itself, forms what is termed after-damp, which produces effects more fatal even than those arising from the explosion. It often happens, that after an explosion a sufficient quantity of oxygen remains to support the respiration of those who survive its effects, were it not for the presence of carbonic acid. This gas, when present in no greater proportion than 1 or 2 per cent., is capable of producing the most injurious effects. It has, therefore, been suggested, that cheap mixtures, made of substances capable of absorbing carbonic acid, such as glauber salts and lime, would prove useful to those who try to aid the sufferers after the explosion. Such a mixture placed in a coarse bag, and applied to the mouth, would effectually absorb the carbonic acid, and prevent it exercising an injurious effect on respiration.

The commissioners then advert to the lighting of mines. They show wherein the Davy lamp is unsafe, and remark—

Without desiring, in the slightest degree, to cast unnecessary doubt on the safety of the Davy lamp, since we consider its cautious use an immense boon to coal mining, and believe that much additional security is obtained by the proper use of the original Davy, or of its improvements, it can scarcely be denied that far more care in the use of safety lamps is needed than is commonly employed. Although shields or glass cylinders are used in some localities, they are never employed in others; and the bare single cylinder of wire gauze, not always properly manufactured, is the only form in which the Davy lamp is known. And it should be observed, that, with a few local exemptions, the Davy lamp is that commonly employed. Numerous modifications, and in some cases improvements, of the safety lamp have been made; but either from the expense, or want of simplicity in management, have never come generally into use. The colliers, by their usual mode of carrying the common Davy lamp, certainly, under ordinary circumstances, guard against the passage of any current of fire damp sufficiently strong to pass the flame, by placing the lamp within their jacket flaps, or carefully protected in some other manner. Abundant carelessness is often, however, apparent; and when the collieries are viewed as a whole, unnecessary risk is too common, especially when it is recollected that the foolhardiness or carelessness of any one may destroy the lives of many. To those who have, during many years, had occasion to visit collieries in different parts of Great Britain, the thoughtless daring of many of our colliers, and their frequent carelessness under danger, must be familiar. They will often, in an endeavour to execute more work in a given time, when paid by the ton or piece, remove the covers of their lamps, or employ a candle at a risk. Some even prefer a candle, to ascertain the presence of fire-damp, since by it they more readily see the change in the flame. In many districts, though in some they are anxious to employ the safety lamp, it requires much trouble on the part of the managers to prevent the continual use of candles in suspected places, before the danger becomes known to them. The less light afforded by lamps is considered a great drawback to their use when it can be avoided. Many most careful men, no doubt, anxiously watch over the common danger, and great precautions are taken by many coalowners and workers; but looking at the subject generally, and without reference to many exceptions, especially to be found in the north of England, the want of system in the management of lights, and in due precautions respecting the kinds employed, can scarcely escape the observations of those whose opportunities have been sufficiently extended.

The use of single shafts is next considered:

In a single shaft, as has been often remarked, the ventilation may be cut off from the workings of a whole colliery in an instant, by an explosion sufficient to destroy the doors or partitions directing the air-courses, the air merely going down one division in the shaft and rising through another, when the brattices may not be destroyed by the explosion, and a kind of draught kept up. Thus all not destroyed by the explosion perish in the mixture of nitrogen and carbonic acid, known as after-damp, to which no fresh air can reach. In the explosion at Jarrow Colliery, there was only a single shaft communicating with the workings upon two beds of coal, one above the other; and the lower part of the brattice in the shaft was so shattered by the late explosion in it, that Dr. Playfair and Mr. Williams, in their descent into the pit, then containing a large amount of the fire-damp, had to be let down a considerable distance by a loop in a rope. In this explosion the upper portion of the brattice fortunately remained, and thus the lives of many of those engaged in the upper workings were saved, although several perished. Even in a double shaft, or two shafts not far distant from each other, if the air be not made to course for a considerable distance amid the workings by a firm thick parting of coal, any needful perforation in the parting for the progress of the colliery being firmly built up, a whole mass of workings may, by an explosion, be suddenly cut off from ventilation, and numbers of persons, not killed by the explosion, perish by the after-damp. This was the case at the late explosion at Risca. It should, however, in this instance be observed, that the colliery was, as regards ventilation, in a transition state, a more perfect arrangement for ventilation being in progress. When it is considered that coals are worked in the United Kingdom under every variety of condition—from levels driven into mountains sides to pits sunk to great depths through masses of superincumbent rocks—in beds ranging from a vertical to a horizontal position, and even contorted and bent—sometimes traversed by faults, at others free from them—the beds near the surface in one place, and ranging beneath mountains in another—in fact, under a great variety of geological conditions, it is not difficult to see that many plans which have been suggested for the working of collieries, good as they may be for some localities, would be inapplicable generally, and would indeed fail, except under the conditions fitted for them.

A system of judicious district inspection and supervision is then recommended:

Jealous as the coalowners should properly be of any undue intermeddling with their colleries, it may, nevertheless, be true that a judicious system of superintendence in a district, by which the proper ventilation of colleries, efficient knowledge on the part of subordinate agents, and proper punishment for foolhardiness or carelessness on the part of the colliers may be secured, would be a great advantage to them individually and collectively, and be the saving not only of lives but of much capital, securing them, in the case of accidents, from many an unjust accusation from neglect. On the other hand, careful but not overmeddling supervision would afford confidence to the collier. Proper persons being appointed as superintendents (and, if improper, their deficiences would soon become apparent, and their removal the consequence), he would feel that he has the advantage of the existing knowledge of the day brought to bear upon the partiular conditions under which the colliery in which he labours is worked.

Should the suggestion of a system of judicious inspection be considered worthy of consideration, the ready access to proper plans and sections of collieries, brought up to given times, would necessarily form a part of any general system of regulations. If correct (and power to ascertain that they were so would be essential), they would at once disclose the system of working and ventilation adopted, and, with information respecting the police regulations, and an account

of the kind of lights employed, would at once afford a general view of the mode of conducting any particular colliery, and of the adjustment of the workings to conditions. It being considered that safety lamps, properly used, do effect much security in the working of coal, and that in so many cases explosions do take place when they are not employed, it has often been suggested, that the Legislature should compel the general use of safety lamps in coal mines. But, on the other hand, there are many collieries in which fire-damp never appears, and it would justly be considered a hardship in such cases to compel a precaution altogether unnecessary. We would suggest, that it could not be considered unjust for the Legislature to compel the use of safety lamps in all fiery collieries; and, in the present state of the law of property, it might even be prudent to assume that all collieries in districts where explosions have been frequent are fiery, putting the *onus probandi* that they are not upon the owners of such collieries. Under such a state of things, and considering the number of valuable lives annually lost by colliery explosions, the continued risk to which so many are daily exposed, the national injury sustained by the imprudent and careless mode of extracting coal in many localities—one often felt oppressively also by the parties engaged in colliery speculations—that the workings for coal must be adjusted to local conditions—we are led to consider, that these evils might be at least mitigated by the careful and judicious inspection of convenient districts by competent persons, the necessary funds to be raised from such districts by a very slight impost, not even exceeding one farthing on each ton of coal raised in it; and we believe that the cause of humanity and the interests of the coalowners would be alike benefited by a well-considered legislative measure of this kind.

STEEL TRADE OF SHEFFIELD.

We have some interesting particulars, gleaned from the evidence of witnesses examined by the Lords' Committee on the Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole Railway.

Mr. SWAN (agent of the Duke of Norfolk's lessees of the coal mines at Chapeltown) gave detailed evidence respecting the productions of the above mines, the present mode and price of transit, and the advantages to be derived by these collieries from the proposed scheme, in opening a communication with Sheffield, the town in which they calculated upon the greatest consumption of their coal and coke.—In answer to a question, the witness stated, that steel manufacture was the staple trade of Sheffield, and that the Silkstone coal, of which the seam at Chapeltown was a continuation, was indispensible for it.

Mr. HOLT (surveyor) specified the varieties, qualities, prices, and thickness of the different coal seams of that portion of the great Yorkshire coal-field, which lies between Wakefield and Rotherham. The witness did not think that a considerable market for this coal could be looked for from the western district.

Mr. WALKER (surveyor and mining engineer) gave similar testimony, and concurred in the last evidence.

Mr. UNWIN estimated that about 32,000 tons of "converting" coal were annually used at Sheffield, and that the total consumption of coal there was 800,000 tons a year. By the proposed line a saving of 2s. 6d. per ton in carriage would be effected, amounting to 100,000*l.* per annum. The Sheffield pits do not afford a sufficient supply, and the surplus is supplied from the Barnsley field. Upwards of 180,000 tons are used in the melting of steel; 18,000 in the breweries and founderies; 310,000 in private houses, averaging 12 tons per house.

Mr. JESSOP (of the firm of Jessop and Son, the largest manufacturer of steel in the world) did not think that the manufacture of edge-tools in Sheffield was decreasing; but it certainly had not increased in the same proportion as that of steel during the last seven years. It was of indispensible importance to have a constant and ample supply of converting coal and melting coke. Sheffield did not produce enough. About 10½ tons of coal are required for one ton of steel. The witness then described the processes of converting, melting, and rolling of steel. He thought that the Barnsley field coal was equal, and for some purposes superior, to that of Sheffield. An additional supply of melting coke was of vital importance to the increasing manufacture of steel.—In reply to the committee, the witness stated that his firm made about 50 tons of steel weekly, of which two-thirds were consigned to his brother in New York, in the form of bars and sheets. In this state it was purchased by the Americans, and manufactured by them into saws, files, and edge-tools.

Mr. VICKERS (steel converter), gave similar evidence; and though he acknowledged that the manufacture of steel was greatly increasing in France and on the continent, he thought Sheffield would be able to compete successfully, if cheaply and sufficiently supplied with proper coals; which opinion was confirmed by Mr. BUTCHER (mayor of Sheffield), also a steel converter.

MINE ACCIDENTS.

East Wheal Rose.—It is reported that a serious accident has taken place at this mine, by the breakage of machinery; whereby four lives were lost and others maimed.—We trust there is no truth in the rumour.

Wheal Friendship Mine.—As John Chubb was tamping a hole, the powder ignited, and an explosion ensued, by which, unfortunately, his left eye was completely knocked out, and the other so much hurt, that it is feared its use is lost: he is also much bruised about his body.

Warning to Miners.—Two serious accidents occurred from the dangerous practice of "boring" out holes when a failure of explosion occurs—the first took place at Wheal Vyvyan Mine, where three young men, Bishop, Medlyn, and Moyle, were engaged boring out a hole that had missed fire, and had almost extracted the whole of the tamping, when it exploded, terribly mangling the left arm and little finger of Bishop; knocking out the left eye of Medlyn, and slightly injuring the eyes of Moyle. Luckily, the direction of the hole prevented its doing any harm to some other men who were close by.—The other accident happened to E. Williams, a labourer at one of the granite quarries at Boreas: here, too, the hole had failed to go off, and he had been "jumping" out the contents, when a sudden explosion occurred, fortunately without bringing its burden; but the tamping occasioned a severe injury of the right hand. The frequency of accidents of this nature ought to induce miners to desist from a practice which often proves destructive of life.

Pendleburg.—A miner, named Wilson, was killed while employed by Messrs. Knowles and Son, in sinking a coal-pit, near Agecroft.

Bickershaw.—J. Kay was killed by a fall of roof in Mr. Ackers's pit.

Dos Works, Newport.—J. Wyndham broke his leg here.

Middle Bank Copper Works.—W. Jones got his hand entangled in the machinery, and so dreadfully lacerated as to render amputation necessary.

Dronfield.—W. Hatfield was suffocated in an unworked pit.

Penswett, Brierley Hill.—W. Morris was killed by an explosion of powder, while "blowing coal"—he had imprudently placed a lighted candle near the charge while using the cleanser.

Kingswanford Colliery.—J. Marsh was killed by a fall of coal.

Rough Hay Colliery.—P. Flanahan was killed by a fall of coal.

Capponfield Colliery.—J. Springthorpe and T. Griffiths (aged 12 and 13) were smothered by a fall of coal while working here.

ASTURIAN MINING COMPANY.—We understand Capt. O. H. Matthews is about quitting the service of this company in Spain, and returning to England.

VIEILLE MONTAGNE ZINC COMPANY.—M. de St. Paul de Sincay has been appointed managing director of this company's works in Belgium, in place of M. de Brouckere, removed.

NEW PATENTS AND REGISTRATIONS.

[From the *Mechanics' Magazine.*]

Extracts from List of English Patents granted between July 18 and July 23, 1846:—

J. Napier, Shacklewell, operative chemist, for improvements in smelting copper ores.

P. Clausen, Leicester-square, gent., for improvements in methods of or apparatus for propelling, and exhausting, and compressing air and aeriform bodies.

T. Bell, Don Alkali Works, South Shields, for improvements in smelting copper ore.

C. W. Fischild, Leamington, gent., for a new engine for obtaining rotary motion.

A. W. Hillary, No. 66, Cadogan-place, Chelsea, at present residing at 146, Avenue des Champs Elysées, Paris, for improvements in the manufacture of gas.

List of Designs for Articles of Utility Registered under 6 and 7 Vic, Cap. 65:—

Maximilian Schenkeuberg, 369, Strand, break for carriages.

W. Wharton, superintendent at the Euston-square station of the London and Birmingham Railway, carriage spring.

J. Legg, St. Phillip-street, Bath-road, Cheltenham, hydraulic rising main.

J. Dredge, Bath, civil engineer, improved furnace bar.

COLLEGE OF CIVIL ENGINEERS.—The annual meeting, and distribution of prizes, took place on Tuesday, at the institution at Putney. The chair was taken by the Duke of Buccleuch, supported by the Earls of Devon and Denbigh, Sir C. Lemon, Mr. Armstrong, Col. Sykes, Col. Devereux, Sir J. Duckwood, Gen. Harry Thompson, the Bishop of London, the Lord Mayor, &c. The prizes were as follows:—1st class, Sharp and Stephenson; 2d class, W. Clarke; 3d class, Coghlan. In chymistry, laboratory students, Ward and Newsome; 2d division, Codrington; 3d division, Bennett. Civil Engineering, 1st class, Stephenson; 2d class, W. Clarke; 3d class, Crump, Willett, and Sharpe. Machinery, 1st class, Willett, Neale, and Hansen; the two latter for drawing. Manufacture of iron, Pontifex. Other prizes were also awarded to Messrs. Stephenson, Coghlan, Davidson, and Fielding. Landscape drawing, Davidson. Geology, Sharp. French, Baldry. German, Hansen. The distribution of these prizes occupied a considerable time, and excited great interest among a large number of persons present. The meeting separated after some formal business.

BEER BY POST.—We have to-day been favoured with a communication by post, inclosing a sample of the concentrated malt and hop extract, an article which is now being manufactured on a large scale, for facilitating the process of domestic brewing. A sufficient quantity has been sent to us to dissolve in a glass of hot water, producing excellent brewers' sweet wort, retaining all the fine flavour and aroma of the hops. This is certainly the greatest novelty in brewing that has appeared for some years, and so surprisingly simplifies the art, by dispensing with all the usual apparatus, that no family need now be without home-brewed ale.—*Liverpool Journal.*

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Twelve o'clock.

Bank Stock, 7 per Cent., 208	Belgian Bonds, 4½ per Cents., 98
3 per Cent. Reduced Ann., 96 5⅞ 6	Dutch, 2½ per Cent., 59½
3 per Cent. Consols Ann., 95⅞ ⅝	Brazilian, 5 per Cents., 87 6
3 per Cent. Annuities, —	Chilian, 6 per Cents., 98
3½ per Cent. Ann., 97⅛ ⅜	Mexican, 5 per Cents., 25¾
Long Annuities, 10½	Spanish, 5 per Cents., 24¾
India Stock, 10½ per Cent., 261 2½	Ditto Deferred, —
3 per Cent. Consols for Acc., 95⅞	Portuguese, 5 per Cents., 83
Exchequer Bills, 1000*l.*, 11 14 10 pm.	Russian, 5 per Cents., 112

MINES.—The dull monotony of the mining share market has been relieved this week, by advices of improvement in several Cornish mines, and more especially in the eastern part of the county and Devon. The discovery which has taken place in Wheal Concord, has animated her admirers to a greater degree of confidence in her future fertility. Transactions in the following mines have been done:—West Wheal Maria, Wheal Walker, Concord, Fortescue, Gill, Agnes, Devon and Courtney, Herodsfoot, Condurrow, Mary Ann, West Caradon, Craddock Moor, Treleigh, West Wheal Jewel, Stray Park; and in foreign mines—Santiago, Cobre, St. John del Rey, Bolanos, and Imperial Brazilian have changed hands.

RAILWAYS.—At the commencement of the week, transactions in the share market were less active, but prices were generally maintained: they have remained steady since, with little speculation. What business has been done was without spirit, and prices remain as low as at the commencement of the week.

House of Lords.—The number of bills agreed to this week was 11; preambles proved, 18; not proved, 4; bills passed Standing Orders, 7.

House of Commons.—Reports upon four railway bills were brought up, and laid on the table.—Third reading: Ely and Huntingdon Railway.—Lords amendments agreed to, 10.—Preambles proved, 24.—Preamble not proved: Leicester and Bedford; Wisbeach and Spalding; Lynn and Ely.—Withdrawn, Wisbeach and March extension.

MEETINGS.—Birkenhead, Lancashire, and Cheshire Junction: first general meeting; the capital 1,500,000*l.*, in 45,000 shares, of 33*l.* 6s. 8d. each; 40,000 shares would shortly be allotted—they already amounted to 33,768.—the amount of calls was 122,359*l.* 8s. 5d., and expenditure 38,339*l.* 6s. 4d; four calls, of 25s. each, would be made in all 1847.—Derby, Uttoxeter, and Stafford, for dissolution: 7215 votes in favour, 1*l.* 12s. 6d. to be returned immediately, and from 8s. to 10s. more expected.—Trent Valley Continuation and Holywell Junction: resolved to dissolve the company; it was expected about 2*l.* 2s. per share would be returned.—Perth and Inverness: 24,430 in favour of dissolution; 30s. per share to be returned immediately, and about 3s. more expected.

RAILWAY DEPOSITS PAID OUT OF COURT.—The Bognor and Littlehampton Branch of the Brighton and Chichester, bill passed, 3375*l.*; the London and Brighton (Steyning branch), passed, 3000*l.*; the Leeds Central Railway station, withdrawn, 21,000*l.*; the Newmarket and Chesterfield, passed, 27,221*l.*; the Lancashire and Yorkshire Railway, 31,000*l.*; London, Newbury, and Bath Railway, rejected, 58,600*l.*; the Manchester, Midland, and Great Grimsby Junction, rejected, 30,000*l.*; Blackburn, Chorley, and Liverpool Railway, rejected, 34,947*l.*; Wakefield, Pontefract, and Goole, two branches passed, 4000*l.* and 18,800*l.*—in the last case, the Vice-Chancellor decided that it was not necessary to have the Speaker's certificate when the bill had been passed, as that fact was supposed to be known to all the world; the Cambridge and Weedon, passed, 39,000*l.*; the Leeds, Manchester, and Dewsbury, rejected, 23,542*l.*; the South Midland, Northampton to Bedford, rejected, 108,690*l.*; the Lancaster and North Yorkshire, passed, 56,000*l.*; Manchester and Sheffield and Midland Junction, the bill having been rejected, 80,140*l.*; East and West Yorkshire, the bill having passed, 16,462.

THE RAILWAY RELIEF BILL.—The bill introduced by Sir Robert Peel (observes a correspondent) was intended to relieve those parties who had incautiously entered into railway liabilities. There are thousands throughout the country who are now forced to go on contrary to their will and their means. Should not, therefore, something be done to save them from ruin? Trade and commerce must remain cramped until something be done; and nothing, he thinks, would redound so much to the credit of the present Ministry as a wholesome and just measure on the question. He suggests, that it is clear that the moneys of the subscribers to the deeds have been spent for and on behalf of the lines. Would it not, therefore, be equitable and proper that all such companies as are determined to go on, should not only release those parties who now wish to retire from all liabilities, but further, that they should return the money advanced, or at least a part thereof? The consequence of this would be, that the line would then be made by those parties who can afford to pay up the calls, and not left (as at present) in a very doubtful position. Surely the heavy discount at which some of the most promising lines appear, should be sufficient, he remarks, to prove that something like the above is necessary to save thousands from ruin.

LANCASTER AND CARLISLE RAILWAY.—A great deal of heavy work on the railway has had to be undone, and reconstructed on fresh principles. For about a mile near Strop, in Westmoreland, where the permanent lines were laid and the line finished, workmen are now taking them up again, and the level will have to be reduced, in some places two or three feet. The bridge at Clifton was rebuilt, and another on the Clifton Hall estate is in a dangerous state, and will have to be reconstructed. The slipping of the great cutting at Wveay, near Carlisle, is a job of great difficulty and cost, together with other workings on this line at Catterlein and other places.

In the Lords' Committee on the Cornwall line a witness was cross-examined by Mr. Serj. Kinglake, and some lively repartees passed between them. On the question of the passenger traffic between St. Austell and Truro, by way of vans, the witness, Mr. Williams, said they were used chiefly by persons of a low class. On being pressed by the learned serjeant, he said he had never travelled in these vans himself, though he believed barristers had.

SUBMARINE TELEGRAPH.—During the last few days, some very interesting experiments have been made in the Portsmouth dockyard, and on board her Majesty's ships *Pique* and *Blake*, with a portion of the submarine telegraph, intended to be laid across this harbour, under the sanction of the Lords of the Admiralty Commissioners. The quantity of the telegraphic wire already perfected, with which these experiments were made, is about half of the entire length that will be required to reach from the victualling-yard at Gosport, where the present telegraphic communication terminates, to the Admiral's official residence on this side. The experiments were made under the superintendence of Mr. Hay, the chymical referee and lecturer to the dockyard. The galvanic batteries used on the occasion, consisted merely of five single jars, 1½ inch by 4, on Smee's principle. The first experiment tried, was to test the gravity of the wire, in order to ascertain whether the substances used to secure perfect insulation might not have rendered the wire too buoyant. This, however, was satisfactorily proved not to be the case: for upon its being paid out from the stern of her Majesty's ship *Blake*, its gravity was found quite sufficient for the deepest water. The index used most satisfactorily tested the capabilities of the invention, being one which had been constructed for the conveyance of signals for short distances—a mere model, made by Mr. Hay, for the inspection of the Admiralty, from which communications might be made from the bridge of steam-vessels to the engine-room below. The electric fluid was made to traverse the whole length of the submarine telegraph, which, having been carried out in a bight from the *Blake* by the boats in attendance, was allowed to sink to the bottom. The signals were as promptly shown by the index as though merely transmitted from the deck to the engine-room, without passing so many fathoms through the salt water, thus proving beyond doubt the practical success of this mode of conveying intelligence even across the sea. Several other experiments were tried with other wires, differently insulated, but neither as regards gravitation, nor as regards giving a perfect communication, were these modes of insulation equal to that decided upon by the inventors. In establishing the electric telegraph across a harbour so crowded with shipping as this generally is, the practical difficulty arising from the possible disturbance of the telegraph, is the only one which the projectors had to contend with, for it is now proved beyond doubt, that the electric fluid can be transmitted through the water with the same facility as it is along the lines in operation on land. The mode of conveying these electric communications on land, however perfect, could not be adopted across a broad channel of the sea, and hence the present telegraphic communication between the dockyard and the Admiralty in London has been imperfect, because the impediments in conveying it across the water have hitherto been deemed insurmountable. Not that there was any difficulty in conveying the electric fluid through the water, because the known laws of electricity have always shown this to be feasible, but because of the difficulty in laying down a line of conveyance which should not be interfered with by the casualities of the harbour. The projectors of the present plan being nautical as well as scientific men have surmounted this apparent obstacle, which the mere scientific have hitherto not been able to overcome. The importance of these experiments is obvious, for if the communication can be carried across Portsmouth Harbour, it follows, as a matter of course, that it may, with at least equal facility, be carried from headland to headland, where it cannot be interfered with by the anchorage of numerous vessels. Thus, between Great Britain and France, or any other country separated only by the sea, distance is annihilated. In fact, this new mode of telegraphic communication appears to be one of those wonders which, however strange now, will be looked upon hereafter as a thing of course, and it is scarcely too much to expect that, in less than half a century, a merchant may communicate with his agents in Calcutta in the morning, and receive his reply before sitting down to supper.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Adair's Main 13 6—Carr's Hartley 15—Davison's West Hartley 15—Dean's Primrose 13 6—Grace's Hartley 13 6—Hasting's Hartley 15—Newcastle Hartley 13 6—Ord's Redheugh 13—West Hartley 15—Eden Main 14 9—Cowpen Hartley 15—Sidney's Hartley 15—Wall's End Braddyll's Hetton 15 6—Haswell 16 3—Russell's Hetton 15 3—Shotton 15—Stewart's 15 9—Kelloe 15 6—Tees 15 6.—Ships, 37; sold, 26; unsold, 11.

WEDNESDAY.—Carr's Hartley 15—Dean's Primrose 13 6—Grace's Hartley 13 6—Hastings' Hartley 15—Holywell Main 15—Ord's Redheugh 13—Wall's End Killingworth 14 6—Eden Main 14 9—Braddyll's Hetton 15 6—East Hetton 14 6—Hetton 15 9—Lambton 15 3—Stewart's 15 9—Heugh Hall 14 9—Tees 15 6—Alloa 13 6—Cowpen Hartley 15—Sidney's Hartley 15.—Ships at market, 41.

FRIDAY.—Adair's 13 6—Carr's Hartley 15—Chester Main 13 6—Davison's West Hartley 15—Ellison Low Main 12 6—Holywell 15—New Tanfield 13 6—Original Tanfield 13—Ord's Redheugh 13—West Hartley 15—Willington Hartley 14—Wylam 13 9—Wall's End Bewick and Co. 14 9—Hilda 14—Killingworth 14 6—Northumberland 14 3—Wharncliffe 14 6—Eden Main 14 9—Belmont 14 9—Braddyll's Hetton 15 6—Haswell 16—Hetton 15 9—Lambton 15 3—Russell's Hetton 15 3—Shotton 14 9—Stewart's 15 9—Whitwell 14 6—Heugh Hall 14 6—Kelloe 15 6—Seymour Tees 14 6—South Durham 14 3—West Tees 14—Cowpen Hartley 15—Garesfield Coke 23 6—Sidney's Hartley 15.—Ships 96.

RAILWAY SHARE LIST.

RAILWAYS.	Paid	Closing pr. last week.	Closing pr. last night.
Aberdeen	£10	8½	8½
Amber, Nottingham, Boston, and Erewash Junction	2½	1	1¼
Armagh, Coleraine, and Portrush—25*l.* shares	1½	⅛	—
Birmingham and Gloucester—100*l.* shares	100	131	129½
Birmingham and Oxford Junction—20*l.* shares	2	4¼	4¼
Bristol and Exeter—100*l.* shares	70	—	82½
Bristol and Gloucester—50*l.* per share	30	—	52½
Caledonian—50*l.* per share	5	12¼	13
Cambridge and Lincoln—25*l.* shares	1½	—	—
Chelmsford and Bury	1½	—	—
Chester and Holyhead—50*l.* shares	27½	21½	27½
Direct Northern—50*l.* shares	2½	1	⅛
Direct Manchester (Remington's)—20*l.* shares	2½	⅛	⅛
Ditto Rastrick's	5½	—	—
Dublin and Galway—50*l.* shares	4	1½	1⅝
Dundalk and Enniskillen—50*l.* shares	7½	—	—
Eastern Counties—25*l.* shares	14*l.* 16s	24⅛	24½
East Lincolnshire	1½	⅛	⅛
Edinburgh and Glasgow—50*l.* shares	50	73	73
Exeter, Yeovil, and Dorchester—50*l.* shares	2½	—	3⅛
Goole and Doncaster—20*l.* shares	42*s*	¾ dis.	¾ dis.
Grand Union (Nottingham and Lynn)	1½	⅛	⅛
Great Grimsby and Sheffield—50*l.* shares	5	—	—
Great Southern and Western (Ireland)—50*l.* shares	15	27	28
Great North of England—100*l.* shares	100	224½	232
Great Western—100*l.* shares	80	152	154
Guildford, Farnham, and Portsmouth—50*l.* shares	5	5½	5½
Hull and Selby—50*l.* shares	50	108	106½
Lancaster and Carlisle—50*l.* shares	25	—	—
Leeds and Carlisle	2½	—	—
Leicester and Birmingham—20*l.* shares	22*s*	1 dis.	—
Leicester and Bedford—20*l.* shares	22*s*	⅜ dis.	⅜ dis.
Leicester and Tamworth—20*l.* shares	42*s*	1½ dis.	1½ dis.
Liverpool, Manchester, and Newcastle Junction	1½	1½	1½
London and Birmingham	stock.	228½	230
London and Birmingham Extension—25*l.* shares	1½	—	—
London and Blackwall	Av. 16*l.* 13*s* 4*d*	9	8⅝
London and Brighton—50*l.* shares	50	66	64½
London and Croydon	Av. 13*l.* 15*s* 9*d*	23½	23½
London and Greenwich	Av. 12*l.* 15*s* 4*d*	9½	9½
London and South Western	Av. 41*l.* 6*s* 10*d*	79½	78½
London and York—50*l.* shares	2½	1	1
London, Salisbury, and Yeovil—50*l.* shares	2½	1	1
Londonderry and Coleraine—50*l.* shares	2½	—	—
Lynn and Ely—25*l.* shares	15	—	2½
Lynn and Dereham—25*l.* shares	15	10½	13½
Manchester and Leeds—100*l.* shares	82	—	11
Manchester and Birmingham—40*l.* shares	40	84½	118
Manchester, Buxton, and Matlock—20*l.* shares	42*s*	¾ pm.	86
Manchester and Southampton	2	1⅜	¾ pm.
Midland	Stock	151	1¼
Ditto Birmingham and Derby	Stock	—	147
Newcastle and Berwick—25*l.* shares	10	26½	120
Newcastle and Carlisle—100*l.* shares	100	—	26½
Newcastle and Darlington Junction—25*l.* shares	25	—	—
Ditto New (Brandling)—25*l.* shares	20	—	45
Newark, Sheffield, and Boston—25*l.* shares	2½	—	44
North British—25*l.* shares	17½	30½	—
North Devon	2	—	35½
Northern and Eastern—50*l.* shares	45	75	—
North Kent and Direct Dover—50*l.* shares	2½	1½	75½
North Staffordshire—20*l.* shares	42*s*	3¼ pm.	1½
Oxford, Worcester, and Wolverhampton	12½	—	3¼ pm.
Portsmouth Direct—50*l.* shares	3½	4⅜	7⅛
Preston and Wyre—50*l.* shares	50	31⅛	4⅜
Richmond—20*l.* shares	5	18	34
Rugby and Huntingdon—20*l.* shares	2	—	18½
Scottish Central—25*l.* shares	7½	20	—
Scottish Midland—25*l.* shares	10	—	19½
Sheffield and Manchester—100*l.* shares	100	—	6⅝
Shrewsbury and Birmingham	2½	2½	—
South Devon—50*l.* shares	25	—	2
South Eastern and Dover	Av. 33*l.* 2*s* 4*d*	44⅜	—
South Midland—20*l.* shares	42*s*	⅛ pm.	44⅜
South Wales—50*l.* shares	5	1⅜	⅛ pm.
Staines and Richmond—20*l.* shares	1	⅛	1⅜
Trent Valley—20*l.* shares	5	—	—
Trent Valley and Holyhead Junction—20*l.* shares	2½	—	—
Vale of Neath	2	—	—
Welsh Midland	2½	⅛	1
Wilts, Somerset, and Weymouth—50*l.* shares	5	4¼ dis.	1
Yarmouth and Norwich—20*l.* shares	20	—	—
York and Carlisle	2½	1	—
York and North Midland—50*l.* shares	50	101	⅛
Ditto Selby—50*l.* shares	30	79	101
FOREIGN RAILWAYS.			—
Boulogne and Amiens—20*l.* shares	10	12⅝	12¼
Bordeaux and Toulouse and Cette (Mackenzie)—20*l.* shares	2	1½	—
Bordeaux, Toulouse, and Cette (Espalete)—20*l.* shares	2	—	⅛
Central of Spain—20*l.* shares	2	⅛	—
Dutch Rhenish—20*l.* shares	5	7	6⅝
East Indian	¼	—	⅜
Great Northern of France (constituted)	5	12¼	12¼
Great Western Bengal	¼	—	—
Great Western Canada—22½*l.* shares	3¼	4¼	—
Jamaica and South Midland Junction—20*l.* shares	1	—	—
Jamaica North Midland	1	—	—
Louvaine and Jemappe—20*l.* shares	4	1½	—
Lyons and Avignon—20*l.* shares	2	1⅛	1⅛
Luxembourg	4	1½	1½
Namur and Liege—20*l.* shares	4	3½	3
Orleans and Vierzon—20*l.* shares	10	—	14
Orleans and Bordeaux—20*l.* shares	6	8½	7⅜
Paris and St. Quentin—20*l.* per share	2	—	—
Paris and Orleans—20*l.* shares	20	48½	—
Paris and Rouen—20*l.* shares	20	38½	—
Rouen and Havre—20*l.* shares	18	28	26⅝
Sambre and Meuse—20*l.* shares	6	4	3⅛
Strasburg and Basle—14*l.* shares	14	—	—
West Flanders	4	—	3½

* Prices obtained from country brokers—no business doing in the London market.

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rway.	Present actual cost.	Last Div.	*Traffic Returns,* 1846	1845
Arbroath and Forfar	15	£140,782	3½ *p.c.*	£231 0 0	£220
Chester and Birkenhead	15	589,632	2½	722 11 0	883
Dublin and Drogheda	32	631,258	4	878 0 10	810
Dublin and Kingstown	6	349,736	9	1084 6 7	1233
Dundee and Arbroath	17	153,598	6	402 12 10½	436
Durham and Sunderland	19	302,118	2	570 2 10	550
E. Counties & North. & East.	124½	4,090,328	5	9718 3 9	5765
Edinburgh and Glasgow	46	1,686,226	6	4497 4 4	3386
Glasgow, Paisley, and Ayr	51	1,104,773	6	2875 3 3	2571
Glasgow, Paisley, & Greenock	23	806,134	2	1502 19 7	1544
Grand Junction Company *	119	2,597,317	10	—	11053
Gravesend and Rochester	7	85,000	—	357 12 0	346
Great North of England	45	1,296,196	6	—	—
Great Western	240	8,179,980	8	20706 15 9	19456
Hartlepool	—	—	—	902 16 4	—
London and North Western	176	7,417,217	10	42279 16 1	22001
London and Blackwall	4	1,078,851	1½	1598 4 5	1550
London and Brighton	69	2,653,673	7	7870 11 11	5800
London and Croydon	10	842,592	3½	2053 7 7½	1857
London and South-Western	93	2,620,724	10½	8779 0 4	10644
Manchester and Birmingham	85	2,197,585	6	4511 8 4	4013
Manchester & Leeds	61	3,972,869	8	7172 19 4	7005
Manchester, Bolton, & Bury	10	842,725	6½	1181 14 11½	963
Midland Company	169	6,636,105	6	18178 10 11	16868
Newcastle and Carlisle	65	1,137,385	5	3032 0 9	1666
Newcastle and Darlington	22½	1,272,031	9	4434 14 4	2842
Newcastle and North Shields	7	316,869	5	716 0 0	516
Norfolk	59	573,819	5	1306 10 4	431
North Union, Bolton &c.‡	32	1,060,551	6½	—	1875
Preston and Wyre	22	432,014	2	1237 16 7	822
Sheffield and Manchester	41	1,313,225	2½	2054 1 1	1520
South-Eastern and Dover‡	103	4,284,924	3½	9700 1 2	7546
Taff Vale	30	648,348	5	1278 14 5	1169
Ulster	25	358,353	3½	740 7 10	591
Yarmouth and Norwich	20½	250,037	5	—	431
York and North Midland	53	1,632,859	10	7252 0 8	5264
Paris and Orleans	82	2,082,916	8	—	6041
Paris and Rouen	84	1,995,306	9	6597 0 0	6111

RAILWAY TRAFFIC.—From our official returns, it appears that the amount of traffic, for the last week, on nearly 1800 miles of railway was 160,198*l.*, thus accounted for:—95,281*l.* for the conveyance of passengers only, 33,262*l.* for the carriage of goods, and a remainder of 31,655*l.* for passengers and goods together not respectively apportioned; being an increase over the corresponding week of last year of 26,036*l.*—*Railway Chronicle*, of this day.

RAILWAY SLEEPERS.—An application was recently made to the Customs, relative to the measurement for duty of railway sleepers imported from New Brunswick. The regulation required them to be piled for the purpose of being cubed. But as the pieces of wood imported for railway sleepers are of different and irregular dimensions, cubing the piles would give a measurement considerably in excess. It would be an endless task to measure them singly. An arrangement was proposed which appears satisfactory to the importers. It is to pile 60 pieces of each description, as an average for the remainder of the cargo; the length, height, and breadth being taken to the quarter of a foot, which, it was thought, would meet the wishes of parties interested. This arrangement has been sanctioned, and directed to be adopted in all future importations from the British possessions of this description of wood goods.

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1024	Alfred Consols	3½	30
235	Andrew and Nangiles	25¼	30
1000	Barristown	4½	30
4000	Bedford	2½	3½
128	Besore Lead Mine	—	27½
320	Birch Tor Tin Mine	10¾	12
8000	Blaenavon	50	40
256	Bodwannick	3	5
100	Botallack	175	200
120	Brewer	—	5
10000	British Iron, New, regis.	10	19
—	Ditto ditto, scrip	10	19
128	Budnick Consols	—	30
100	Bwlch Cwmerfin	20	200
1000	Callington	19	20
256	Caradon Consols	45	40
256	Caradon Copper Mine	9½	8
256	Caradon Mines	15	40
256	Caradon United	24	16–25
256	Caradon Wh. Hooper	12	7
1000	Carn Brea	15	110
114	Charlestown	—	200
236	Chypraze	—	4
1900	Combmartin	5½	4½
128	Comfort	—	50
5000	Con. Tretoll Mining Ass.	3¾	2½
128	Condurrow	31	58
2560	Cook's Kitchen	—	6
1000	Copper Bottom	1	5
3200	Cornubian Lead Co.	3	—
1024	Cosheen	4½	25
240	Craddock Moor	9	30
128	Creeg Braws	120	80
500	Cubert Mine	11	30
1024	Devon & Courtney Con.	4	4½
1000	Dhurode	2	5
186	Dolcoath	—	80
10000	Durham County Coal	45	9
128	East Pool	5	35
9000	East Tamar Consols	1½	3
—	East Wheal Albert	1	3
94	East Wheal Crofty	—	300
256	East Wheal Kitty	½	¼
128	East Wheal Rose	50	1000
123	East Wheal Seton	2½	12½
512	Fowey Consols	—	40
20000	Galvanised Iron Co.	10	10
10000	Gen. Mining Co. for Irel.	½	¾
1000	Godolphin	—	35
256	Gonamena	19	118
128	Gover	23	200
244½	Grambler & St. Aubyn	—	30
100	Great Consols	1000	400
256	Great Calestick Moors	—	13
2560	Great Mitchel Consols	—	2
128	Great Resuggor Moor	1	—
100	Grogwinion	5	20
1000	Gunnis Lake	1½	3
128	Hallenbeagle	—	50
1000	Hanson	5	1
1000	Harrowbarrow Old Mine	4½	4
1000	Harrowbarrow Consols	2	1½
800	Hawkmoor	3	3
6000	Heignston Down Con.	1	2
256	Herodsfoot	14	14
10000	Hibernian	12½	1
1000	Holmbush	18	10½
256	Ivy Tor	1½	2½
827	Kirkcudbrightshire	1¾	1½
2048	Lamheroe Wh. Maria	7	6½
128	Lanarth & Penstruthal	—	150
2048	Lanivet Consols	2	4½
200	Larkholes	1	3
160	Levant	—	130
1000	Lewis	12	1½
1280	Llancynfelin	5	15
128	Ludcott	3	3
2800	Marke Valley	10	3¾
5000	Mendip Hills	1½	1
20000	Mining Co. of Ireland	7	12½
1000	Nant-A'r-Nelle	2	2½
200	Nanterrow Consols	10½	6
128	New East Crowndale	7½	2
128	North Fowey Consols	10	25
100	North Pool	11	45
70	North Roskear	10½	400
256	North Treburget	2½	4
100	North United	41	20
256	North Wh. Leisure	1½	6
128	North Wh. Providence	2½	10
256	North Wheal Rose	26½	20
15000	Northern Coal Co.	23	2
600	Old Delabole Slate Co.	25	45
128	Par Consols	—	900
256	Penhallow Moor	15	5
100	Penrhiw	30	65
128	Pen-y-Cefn Mine	50	55
1280	Perran St. George Un.	13	20
128	Perran Wh. Virgin	—	50
512	Plymouth Wh. Yeoland	1½	3½
10000	Rhymney Iron	50	25
256	Rose Consols	10	7
1000	Rosewall Hill	1	3½
1024	Roscarrock	2½	—
2500	Silver Valley	3	3
256	Sourton Consols	3½	5
128	South Caradon	10	400
2000	South Dolcoath	2	—
260	South St. George	9¼	5
200	South Harvannah	23	26
800	South Towan	10	1½
256	South Trelawney	8½	16
128	South Yeoland	16½	20
128	South Wheal Basset	—	180
124	South Wh. Francis	—	70

BRITISH MINES—*continued.*

Shares.	Company.	Paid	Price.
256	South Wh. Hope	—	5
1000	South Wh. Maria	2½	2
256	South Wheal Rose	11½	3
10000	Southern & Western, Irish	1	2
256	St. Austell Consols	7	20
94	St. Ives Consols	—	600
1000	Stray Park	43	21
9600	Tamar Consols	3	5
6000	Tincroft	7	10½
256	Ting Tang	67	25
128	Tokenbury	124	33
1024	Trelawney Consols	1½	1½
5000	Treleigh Consols	6	4½
256	Trenow Consols	—	170
96	Tresavean	10	250
120	Trethellan	5	40
120	Treviskey and Barrier	61	120
256	Trewallack	—	30
128	Trewellard	12	25½
4000	United Hills	5	3½
100	United Mines	300	800
128	West Basset	10	15
256	West Caradon	20	325
128	West Cargoll	2	15
512	West Fowey Consols	40	35
—	West Kekewich Consols	—	3½
256	Wheal Kekewich	4	8
256	West Providence	—	12
200	West Seton	—	47½
120	West Trethellan	5	32
256	West United Hills	2½	14
256	West Wh. Friendship	5	10
3845	West Wheal Jewel	11	2½
2560	West Wh. Maria	½	3
2560	West Wh. Mitchell	—	2
256	West Wheal Shepherd	—	16
256	West Wheal Tolgus	21¼	17
256	West Wheal Treasury	12	8
240	Westerlake	3	3
6000	Wicklow Copper	5	16½
256	Wheal Albert	10	8
128	Wheal Acland	13	10
256	Wheal Allen	½	4
368	Wheal Anderton	10¾	11½
128	Wheal Ann	—	50
256	Wheal Blencowe	—	20
256	Wheal Boscastle	3½	18
256	Wheal Bian Consols	½	3
128	Wheal Catherine	5½	½
256	Wheal Cleveland	2½	2½
136	Wheal Clifford	—	200
1024	Wheal Concord	5½	9
256	Wheal Fortescue	4½	12–13
256	Wheal Frederick	3	20
384	Wheal Franco	22	25
256	Wheal Gill	17½	37
1000	Wheal Harriet	1	—
128	Wheal Henry	—	5
109	Wheal Hope (Zennor)	23	25
256	Wheal Hope	7	1½
256	Wheal Jane	6	40
265	Wheal Kendall	11½	5
1024	Wheal Maria	1	700
4000	Wheal Martha Consols	4	3
256	Wheal Mary Ann	5	100
1024	Wheal Mary (Calstock)	2½	1¾
256	Wheal Mary Consols	25	15
256	Wheal Mexico	5	5
256	Wheal Mary Lanivet	2½	20
256	Wheal Norris	9	9½
128	Wheal Penrose	—	5
128	Wheal Pollard	11½	12
128	Wheal Prospect	4	9
128	Wheal Providence	31	40
128	Wheal Reeth	1	60
256	Wheal Robins	13	2
128	Wheal Rose	40	25
256	Wheal Salusbury	13	5
512	Wheal Sarah	2½	5
99	Wheal Seton	150	825
1024	Wheal Spearne	1½	8
256	Wheal Sisters	25½	25
128	Wheal St. Cleer	21½	15
260	Wheal Trelawney	7½	135
256	Wheal Trevenna	3½	4
256	Wheal Trewennan	—	10
128	Wheal Venland	12½	20
256	Wheal Victoria	2	6
127	Wheal Virgin	—	50*
1024	Wheal Walter	3	5
256	Wheal Williams	2	20

FOREIGN MINES.

Shares.	Company.	Paid	Price.
5000	Alten Mining Company	14½	1¾
15000	Asturian Mining Co.	6	3
10000	Anglo-Mexican Co.	100	3
3374	Ditto Subscription	25	4
2000	Bolanos	150	4½
12000	Ditto Scrip	15	5
10000	Brazilian Imperial	20	4
12000	Cobre Copper Co.	40	23
8500	Colombian Co. regis.	55	} 4½
5000	Ditto Scrip	—	}
10000	Copiapo Mining Co.	14	2
20000	General Mining Ass'n.	20	15
5051	Mexican Company	59	5
12000	Mocaubas & Cocaes	25	8½
29320	{ Rl. del Monte, regis. / Ditto unregistered }	28¾	av. 3¾
	Ditto Red Debentures	—	19
	Ditto Black ditto	—	17
	Ditto Loan Notes	150	117
7000	Royal Santiago	10	11
2000	Pachuca Mines	3	3½
11000	St. John del Rey	15	11
43174	United Mexican	28½	3½

*** *We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

LATEST CURRENT PRICES OF METALS.

LONDON, JULY 24, 1845.

	£ s.	£ s. d.
IRON—Bar *a*..Wales..*ton*	8 0—	8 5 0
„ ..London ..	9 0—	9 5 0
Nail rods „	10 0—	10 5 0
Hoop (Staf.) „	0 0—	11 10 0
Sheet „ „	0 0—	12 10 0
Bars „ „	10 10—	11 0 0
Rails, average	0 0—	9 10 0
Welsh cold-blast foundry pig	0 0—	5 5 0
Scotch pig *b*, Clyde	3 12 6	3 15 6
Russian, CCND *c*	0 0—	16 0 0
„ PSI	0 0—	16 0 0
„ Gourieff	14 5—	14 10 0
„ Archangel	0 0—	13 12 6
Swedish *d*, on the spot	11 0—	11 10 0
„ Steel, fagt.	0 0—	15 10 0
„ „ kegs *e*	14 0—	14 5 0
COPPER—Tile *f*	0 0—	92 0 0
Tough cake	0 0—	93 0 0
Best selected	0 0—	96 0 0

	£ s.	£ s. d
COPPER—Ordin. sheets, *lb.*	0 0—	0 0 10½
„ bottoms	0 0—	0 0 11½
TIN—Com. blocks *g*..*cwt.*	0 0—	4 12 0
„ bars	0 0—	4 13 6
Refined	0 0—	4 15 0
Straits *h*	4 11—	4 12 0
Banca	0 0—	4 14 6
TIN PLATES—Ch., IC *i*, box	1 9—	1 10 0
„ IX	1 15—	1 16 0
Coke, IC	1 4 6	1 5 0
„ IX	1 10 6	1 11 0
LEAD—Sheet *k*..*ton*	0 0—	19 10 0
Pig, refined	0 0—	21 0 0
„ common	0 0—	18 15 0
„ Spanish, in bd.	17 10—	18 0 0
„ American	0 0—	17 10 0
SPELTER—(Cake) *l*	0 0—	18 5 0
ZINC—(Sheet) *m* export.*	0 0—	28 0 0
QUICKSILVER *n*..*lb.*	0 0—	0 4 6
REFINED METAL ..*ton*	4 15—	5 0 0

a Discount 2½ per cent. *b* Net cash. *c* Discount 2½ per cent. *d* Ditto. *e* In kegs ½ and ¾-inch. *f* Discount 3 per cent. *g* Ditto 2½ per cent. *h* Net cash. in bond. *i* Discount 3 per cent. *k* Ditto 2½ per cent. *l* Net cash. *m* Discount 1½ per cent. *n* Discount 1½ per cent. * For home use it is 32*l.* per ton.

[*From our Correspondent.*]

IRON.—Welsh and Staffordshire rather firmer this week, and 5s. per ton more is asked. Scotch pig, on the contrary, is dull, and there are *sellers* at quotations. In foreign iron and steel nothing doing.

TIN and TIN PLATES have been in good demand since last week's *Mining Journal.*

COPPER, LEAD, and SPELTER, are tolerably firm as to prices, but there is scarcely any business doing in either.

[*Communicated by Messrs. Whitcomb and Barton, Old Broad-street.*]

The increased demand for English bar-iron has caused an advance of 10s. per ton. Welsh and Staffordshire pig-iron continue in steady demand, and very firm. Scotch is not so good—sales having been made at 70s. for mixed Nos.—cash in a month. In other metals nothing to remark.

[*From a Correspondent.*]

In spelter a few small sales have taken place during the week at 18*l.* 2s. 6d., and 18*l.* 5s. per ton. For delivery nothing doing. English bar-iron has again been in active demand during the week, and large parcels have been taken at 8*l.*—bill at six months, and also 8*l.* per ton—net cash, delivered in Wales, at which terms there are still buyers, but the makers are now asking 8*l.* 5s. and 8*l.* 10s. Rails firm at 9*l.* 10s. in Wales. Scotch pig-iron 72s. 6d. for mixed Nos., and 74s. to 75s. for No. 1, delivered at Glasgow. Swedish iron has been sold rather under present quotations; but, owing to the improvement in English iron, the holders are asking the present prices.—Swedish steel dull of sale.—Copper firm, but rather a limited business doing.—English tin is firm, and a fair business doing. Straits in good demand at 91s., and Banca held at 94s. 6d.—English pig-lead is rather easier this week. Spanish is held for 18*l.*, and American, at Liverpool, 17*l.*, at which a parcel of the latter has been sold.

LAMHEROOE WHEAL MARIA.—The flat-rods between the engine-shaft and south shaft will be in action on the 27th inst.; and is is intended to set the sinking of the latter with all dispatch, so as to put out cross-cut at the 24 fm. level to intersect the north and south lodes.

EAST WHEAL ROSE ACCIDENT.—Since penning some remarks on this subject, which will be found elsewhere, we learn that, out of the 39 persons missing, 35 bodies have been discovered; the water is down to the bottom of the 80 fm. level, and will soon be in fork. During the week, Capt. Middleton, by way of encouragement, gave 10s. for each corpse brought to surface; those recently recovered are in a very decomposed state.

LAMHEROOE WHEAL MARIA (LEAD & COPPER) MINE
IN 2048 SHARES.
WHEAL CONCORD SILVER-LEAD MINE: 1024 shares.
WHEAL MARY COPPER MINE (Calstock): 1024 shares.
WHEAL WALTER LEAD AND COPPER MINE: 1024 shares.
LOSTWITHIEL CONSOLS COPPER MINE: 1024 shares.
WHEAL WEEKES: 1024 shares.

The BUSINESS of the ABOVE MINES (now in operation on the cost-book system) is conducted at No. 4, KING-STREET, CHEAPSIDE, LONDON, where all INFORMATION respecting them, and the value of the shares, may be obtained.
Specimens from each mine may also be inspected.

WHEAL KELLY LEAD AND COPPER MINE (Devon): 2048 shares. 44
PRINCE EDWARD LEAD AND COPPER MINE (Cornwall): 2048 shares.
COSHEEN COPPER MINE (county of Cork, Ireland): 1024 shares.
ARDTULLY COPPER AND SILVER-LEAD MINES (county of Kerry, Ireland): 3300 shares.
WHEAL HOLWELL: 2048 shares.

SHARES in the five last-mentioned mines TO BE DISPOSED OF. Some splendid specimens of ore from Cosheen and Ardtully have just been taken from the different lodes.
Dated July 4, 1846. JAMES CROFTS, Secretary.

COPPER ORES.

Sampled July 8, and Sold at Pearce's Hotel, Truro, July 23, 1846.

Mines.	*Tons.*	*Price.*
Devon. Gt. Consols, Wh. Maria	126	£7 10 0
ditto	114	3 5 0
ditto	113	3 15 0
ditto	112	4 1 0
ditto	103	3 3 6
ditto	98	4 17 0
ditto	95	8 5 0
ditto	94	3 19 0
ditto	93	3 13 0
ditto	76	6 17 0
ditto	59	7 15 6
ditto	51	5 2 6
ditto	48	4 15 6
ditto	41	7 15 6
Wh. Fanny	54	7 12 0
Tresavean	114	3 13 6
ditto	109	3 0 6
ditto	68	3 3 0
ditto	65	2 18 0
ditto	58	3 10 0
ditto	42	8 8 6
ditto	31	1 12 6
West Caradon	101	5 13 0
ditto	97	6 13 0
ditto	64	6 12 0
ditto	52	10 18 6
ditto	32	3 16 0
Poldice	68	5 3 0
ditto	63	2 19 6
ditto	60	3 1 0
ditto	51	5 1 0
Poldice	37	£4 18 0
ditto	34	4 15 6
ditto	19	2 13 6
Fowey Consols	114	4 12 0
ditto	105	4 16 0
ditto	90	4 16 0
Wh. Lydia	80	4 5 6
ditto	68	4 12 6
ditto	12	5 5 0
South Towan	109	3 13 6
Grambler & St. Aub.	76	2 5 6
ditto	55	5 12 6
ditto	54	6 0 0
ditto	48	5 14 0
Hallenbeagle	80	3 2 6
ditto	79	3 9 6
ditto	41	2 8 0
Treviskey	68	7 5 0
ditto	51	7 13 6
ditto	50	8 10 0
Wh. Jewel	50	3 18 0
ditto	38	4 4 6
ditto	34	3 11 6
Barrier	67	5 18 6
ditto	40	3 13 6
Holmbush	105	5 9 0
Bedford United	91	5 13 6
Ting-tang Consols	74	3 9 6
Wh. Maiden	68	4 3 6
Wh. Comfort	34	2 0 0
ditto	21	4 12 6
West Grambler	13	5 19 0

TOTAL PRODUCE.

Devon Gt. Cons. Wh. Maria, Wh. Fanny	1277	£6688 15 0
Tresavean	487	1758 12 0
West Caradon	346	2327 16 0
Poldice	332	1372 13 0
Fowey Consols	309	1460 8 0
Wh. Lydia, South Towan	269	1120 1 6
Grambler and St. Aubyn	233	1079 17 6
Hallenbeagle	200	622 18 6
Treviskey	169	1309 8 6
Wh. Jewel	122	477 2 0
Barrier	107	543 19 6
Holmbush	105	572 5 0
Bedford United	91	516 8 6
Ting Tang Consols	74	257 3 0
Wh. Maiden	68	283 18 0
Wh. Comfort	55	165 2 6
West Grambler	13	77 7 0

Average standard, 96*l.* 8s.—Average produce, 7½.—Average price per ton, 4*l.* 17s.—Quantity of ore, 4257 tons.—Quantity of fine copper, 335 tons 9 cwts.—Amount of money, 20,633*l.* 15s. 6d.—Average standard of last sale, 98*l.* 13s. 0d.—Average produce ditto 8½.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal	281½	£1593 15 3
English Copper	437½	1980 12 3
Vivian and Sons	714	3024 15 0
Freeman and Co.	405	1746 12 0
Grenfell and Sons	203	1466 13 6
Sims, Willyams, and Co.	482½	2408 1 9
Williams, Foster, and Co.	1733½	8413 5 9
Total tons	4257	£20,633 15 6

Copper ores for sale on Thursday next, at Pearce's Hotel, Truro.—Mines and Parcels—Consols 937—United Mines 805—South Caradon 300—Par Consols 268—Perran St. George, Bolenna, and Wheal Leisure 241—Treleigh Consols 220—Lanivet Consols 194—Trethellan 163—Wh. Ellen 143—St Agnes Consols 118—Wh. Sisters 63—Wh. Andrew and Nangiles 57—Wh. Anna 48—East Downs 13—Wh. Maud 5—Wh. Rock 2—Pembroke 1.—Total 3578 tons.

Copper ores for sale on Thursday week, at Tyack's Hotel, Camborne.—Mines and Parcels.—Wheal Seton 654—Camborne Vean 553—East Wheal Crofty 522—Tincroft 520—Dolcoath 413—South Wheal Basset 335—Fowey Consols 294—Condurrow 150—Godolphin 147—Wheal Vyvyan 78—East Pool 77—Tretoll 43—Hanson Mines 35—Lewis Mines 10.—Total, 3801 tons.

COPPER ORES

Sampled July 1, and Sold at Swansea, July 22, 1846.

Mines.	Tons.	Prod.	Stand.	Price.
Cobre	80	22	80½	£15 8 0
ditto	76	22½	81	16 0 0
ditto	70	22½	81	15 15 0
ditto	65	22½	80	15 15 0
ditto	53	22½	77¾	15 1 0
ditto	52	22	77¾	14 17 6
ditto	51	22	78½	15 0 0
ditto	43	22	78¾	15 1 0
Santiago	120	16½	79¾	10 12 0
ditto	111	15¾	79¾	10 6 0
ditto	107	15¾	81	10 10 0
ditto	100	16	79¾	10 10 0
Berehaven	126	9¼	92¾	6 18 0
ditto	123	9¼	92¾	6 18 0
ditto	105	9¼	93¾	6 18 0
Victoria	112	2½	143¾	0 16 0
ditto	95	2¾	124	1 6 0
ditto	70	2¾	127½	1 5 0
ditto	26	9¾	85	6 0 6
Kapunda	96	32¾	79	23 13 6
ditto	80	28	81	20 8 6
ditto	76	29	79¾	20 17 0
ditto	48	27½	80	19 14 0
Ballymurtagh	78	4	109	£2 2 6
ditto	64	4½	112	2 18 6
ditto	49	4½	111½	2 15 0
ditto	40	6½	103¾	4 2 0
ditto	38	3½	120	1 10 0
ditto	18	3½	120	1 10 0
ditto	2	42	65	25 0 0
Cuba	100	19¾	78¼	13 6 0
ditto	36	21½	78¾	14 14 0
ditto	66	12½	83½	8 3 6
ditto	45	12½	83½	8 4 6
Knockmahon	93	4½	110½	2 6 0
ditto	63	6½	95¾	4 6 6
ditto	62	9¼	86	6 5 0
ditto	41	10	90	6 15 0
Montacute	58	22¾	81	16 3 0
ditto	37	24	81	17 2 6
Cosheen	24	16½	81¾	11 5 0
ditto	22	35½	77	25 0 0
Lackamore	30	10¾	88½	6 18 6
ditto	2	31½	78½	22 0 0
Kaw-aw	14	11½	86½	7 14 0
ditto	10	11½	88	8 2 0

TOTAL PRODUCE.

Cobre	490	£7557 11 0
Santiago	438	4588 16 0
Berehaven	354	2442 12 0
Victoria	303	457 5 0
Kapunda	300	6437 0 0
Ballymurtagh	289	785 14 0
Cuba	247	£2768 17 6
Knockmahon	259	1150 12 6
Montacute	95	1570 6 6
Cosheen	46	820 0 0
Lackamore	32	251 15 0
Kaw-aw	24	188 16 0

Total tons, 2877.—Total amount, £29,019 5s. 6d.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
English Copper Company	273	£1235 11 6
Freeman and Co.	46½	106 19 0
Sims, Willyams, Nevill, Druce, and Co.	277	3177 19 0
Vivian and Sons	1379½	15022 12 0
Williams, Foster, and Co.	901	9476 4 0
Totals	tons 2877	£29,019 5 6

Copper Ores for Sale August 5.—Cobre 100, ditto 95, ditto 91, ditto 86, ditto 28, ditto 99, ditto 97, ditto 94, ditto 93—Cuba 105, ditto 102, ditto 100, ditto 86, ditto 90, ditto 86, ditto 73—Chili 65, ditto 64, ditto 63, ditto 50, ditto 48, ditto 35—Burra Burra 61, ditto 58, ditto 56, ditto 13—Ballymurtagh 63, ditto 14, ditto 37—Berehaven 102—Pennsylvania 41, ditto 22, ditto 42—Yeo Slag 53—Ardtully 52—Montacute 34, ditto 3—Bayamo (withdrawn)—North Molton 5.—Total, 2438 tons.

SILVER-LEAD ORE

Sold at Holywell, on the 15th July, 1846.

Mine.	*Tons.*	*Price.*	*Amount.*
Barristown	44	£17 6 0	£761 4 0

THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending July 18, was 20,020; amount of money, £83 8s. 4d.

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the last week:—

Silver coin to Rotterdam	178,000 ounces.
Ditto to Hamburgh	196,000 „
Silver bars to Rotterdam	30,000 „
Ditto to Hamburgh	14,000 „

NOTICES TO CORRESPONDENTS.

METALLURGICAL TREATMENT OF ORES—We are compelled to postpone the continuation of this series of papers.

Several letters, &c., received by this morning's post, must stand over.

THE MINING JOURNAL

And Atmospheric Railway Gazette.

LONDON, JULY 25, 1846.

*** The MINING JOURNAL is published at Twelve o'clock every Saturday Morning, and can be procured, at that hour, at the office, 26, Fleet-street; or, shortly after, of all booksellers and newsmen. We recommend all orders being forwarded through a regular agent; but, where cause of complaint respecting repeated irregularity may exist, we will endeavour, on application, to remedy the difficulty.

We last week briefly adverted to the cost-book system, and the anomalous character which it presents in various districts, or in various count-houses. We believe no one is prepared even to assert, much less to justify, the assertion, that the cost-book system does not permit the adventurer to retire from the adventure, and abandon or cancel his share, or interest therein, on payment of all arrears of cost, and meeting his proportionate share of any liabilities which may have been incurred up to that period—while, we repeat, he is entitled to his fair proportion of the value of all machinery, materials, stores, ores, and moneys in hand, at the time of his relinquishment. We have agitated the question with many practical and experienced agents, pursers, and adventurers, and there seems to be but one opinion entertained on the subject. Indeed, we may refer to Tresavean, Charlestown United Mines, North Roskear, St. Ive's Consols, Trethellan, Wheal Hope, Wheal Virgin, and last, not least, Wheal Seton—each possessing a certain number of shares less than that determined upon on setting the mine to work—while we know of cases of late occurrence in the west, where the rule has been acted upon, and where, we believe, no doubt ever existed. We have, however, felt it a duty imposed on us to draw attention to the subject, so that the innocent may not be made the dupes of interested parties; and, moreover, that the cost-book system should be understood by the out-adventurer. Indeed, without it be clearly defined, and acted upon with strict adherence to the principle on which it is founded, we apprehend that the registrar of joint-stock companies will be requiring certain of the companies, more especially those formed since the passing of the Act, to conform to the course laid down for registering the several companies, as it would appear to us that a loose system prevails in many professing to act upon the cost-book system. As one of those objectionable acts, we think is the power assumed by directors to make calls without first submitting the cost sheets to the body of adventurers, holding themselves quite aloof from their constituents, and calling them together, perchance, once in 12 months, ordering engines, or effecting sales and changes, and in fact considering themselves as independent administrators of the funds of the adventurers. This we need hardly say is *not* the cost-book system. Another point which has been raised; in the course of the discussions which have arisen out of the consideration of the various bearings which affect the question, is one which seems to have been lost sight of by adventurers generally, and which is never mooted by those whose office is dealing in shares, combining in one and the same person principal and agent—we advert to the transfer of shares. It is notorious that, in nine cases out of ten, it is usual to sign the transfers in blank, and the vendor and vendee being unknown to each other—while the consideration is uniformly designated a valuable one. It is hard to say what is the actual price at which the business is transacted; while the point to which we would direct attention—that of the vendor releasing himself from liability—appears to be altogether lost sight of. We need hardly say that, until the purser is put in possession of the transfer, signed by both parties, he has not the power of writing off the share—so that, perchance, it may so happen, at a future day, that the party selling his interest, and possibly making a sacrifice with the primary object of releasing himself from future responsibility, may be called upon at an after period for calls which may have been made subsequent to the written transfer, or authority, to the purser, to sign over the share, which, being ordinarily handed over to the agent, or to the purchaser, may be retained by them, or passed from hand to hand—while little short of a fraud is practised on the general body of adventurers in the mine, who remain unconscious of any change of hands, and who, on looking at the list of adventurers, in the absence of the transfer being transmitted to the purser for registry, assume that A. B. still continues an adventurer, while in fact his interest had long since been transferred to another, who may, or may not, present it for registry in the cost-book.

Let us assume a particular instance; and, if our information be correct, there is every probability of the case to which we allude becoming generally known. A party holding two shares, or 128th parts, in a certain mine, is led to dispose of his interest, even at a nominal figure, to rid himself of future responsibilities. The shares are not transferred in the cost-book, and the majority of the adventurers subsequently determine on the purchase of machinery and other materials, involving a cost of some 800*l.* or 1000*l.* The merchant, previous to the execution of the order, or giving the credit required, demands to know who are the adventurers, a list is accordingly submitted to him, in which A. B. is set down as a holder of two shares, and as such responsible for the entire demand in case of failure on the part of his co-adventurers; the time, perchance, arrives for payment of the demand, when A. B. is, in due course, applied to for the payment—the purser not having the ability, from the non-payment of the respective proportions of the several adventurers, to meet the discharge of the account. It is then only, for the first time, that A. B. finds himself to be, to all intents and purposes, virtually a shareholder, so far as being liable for the debts of the mine. That he has redress is true, but it is by course of a lengthened and expensive process; and hence the importance of every adventurer, on the sale of his interest, requiring that the transfer or instructions to the purser shall at once be forwarded—indeed, we think the most secure and straightforward course would be, for the party effecting a sale, to send down the transfer to the purser, and, upon the purchaser receiving a letter from the latter, to the effect that the share had been duly signed over in the cost-book, then to pay over to the vendor the amount, whereby both would be secured from any loss or liability. There is another reason why such a course should be pursued—we have known more than one instance of a transfer being executed by a party who held no interest in the mine, but merely trusted to the chance of purchasing a share at a reduced cost, and, subsequently, retransferring that to the purchaser of his assumed interest: we may add, that cases of this kind are notorious; and letters have been received from the purser, stating that the party signing the transfer was not an adventurer. An explanation, of course, ensues—the purchaser is glad to receive the explanation, and the assurance, that matters will be made right, and no more is said. Other instances have come before us, where an actual forgery of the name of the supposed holder has been practised; and an arrangement made, the best under all circumstances. It is to avoid these evils, that we are induced thus to raise a question, which, while it is calculated to create doubt and suspicion, will, we feel assured, in the end be attended with beneficial results to the mining interest at large. In all cases where an agent is employed in the purchase or sale of shares in mines, the principal should require that the name of the party be given—and that the transfer, or instructions to the purser, should at once be forwarded immediately; in the meanwhile, the agent acts as between the par-

ties, and hands over the money from the purchaser to the vendor, less his commission on the due registration of the transfer in the cost-book. We think we have said enough to establish the paramount necessity, so as to ensure security, not to say honesty, of some such course being pursued. There may be some few who will carp and cavil at the proposed measure, but we, at the same time, feel assured we are only giving expression to the wishes entertained by the more respectable brokers. Time bargains should be avoided in mining shares, instances of defalcation in this particular are not unknown to us, nor to a portion, at least, of our readers, and which has brought, if not ruin, on many at least entailed serious losses, not only of money, but of character. It is to avoid results of this nature, which so much tend to destroy mining enterprise, that we are thus emboldened to take the "bull by the horns."

One more word as to a practice which we find resorted to, with transfers filled in blank. There are cases in which the vendor considers that the mine may be affected in public estimation, if it be known in the open market that he is a seller; and hence he allows the agent to take a blank transfer from him, so that the share may be placed in the name of some nominal party for a day or two, when it is again transferred to the *bonâ fide* purchaser—the name of the actual seller being withheld from all except the agent, the "go-between," and the purser. We shall next week resume the subject, and treat on other points relating to the cost-book *system*, which we wish to see carried out on the cost-book *principle*, and more particularly on the responsibility attached to the adventurer, who, it is *assumed*, has only to pay his proportion. The question, however, requires to be treated on at too great a length to warrant us in entering upon it on the present occasion.

The accident at East Wheal Rose Mine, which we recorded in last week's MINING JOURNAL, continues to cause the greatest commiseration throughout the district. In addition to the 500*l.* given by the company, and the very handsome advance made on account of the Bishop of EXETER and sons, several subscriptions have been set afloat, which will, doubtless, greatly tend to the alleviation of the calamities of the sufferers, although of course, in such a case as this, the most extensive liberality will fall short of anything like permanently relieving the necessities of the case. The flood, which caused this lamentable accident, continued about an hour and a half, during which time the greatest possible exertions were made by the agents and the men at surface; the powerful engines were kept working to the very extent of their capability; and, as the water lowered, men were soon found willing to descend to discover their lost comrades. The news of the accident spread rapidly through the county, and many thousands visited the scene of the calamity for several days afterwards. As the bodies were recovered, they were placed in coffins made on the mine, and the funeral expenses were defrayed by the agents. In our notice of the accident, in last week's Journal, we called attention to the subscriptions getting up in the county, and offered to be the medium of communication, by receiving subscriptions, which we would forward, in due course, to the Cornish committee; we regret to say, that such appeal has not been yet favourably answered; but we trust our mining friends in London will aid the cause of humanity, and show to the working miner that, in the midst of the casualties to which he is subject, there is sympathy for him and his, even in the metropolis.

It is a curious fact, that, as commerce extends, so the leading article of commerce appears to change its character. At one period woollen cloths were decidedly the staple commodity of England; cotton, in process of time, greatly interfered with the old staple, and has long been considered the leading interest; now iron would seem to be pressing on both, and to exceed them in value, extent, and importance. It is gratifying, however, to think that, while iron is essentially an English product, the supply in England and Ireland is, and will continue, equal to the already immense, and necessarily increasing demand. In all probability 4000 miles of new railway will receive the Royal Assent this session! The use of iron in naval architecture is only commencing. In domestic and other buildings, iron for beams and rafters, is nearly superseding the use of timber; while the constant wear and tear, on all the railways, independent of those yet to be projected, must create an unheard of, and continued demand. Yet, for all this demand, beyond the vast annual export, our islands are equal to the supply. The old iron works in Wales, in Scotland, in Warwickshire, and Yorkshire, will be kept in full work; although in some cases, the expense of obtaining their raw material, places them somewhat at disadvantage; and new fields of hidden wealth, in the shape of iron and coal, are being brought to light, and into active operation, by native skill and industry, aided by the facilities of railway communication. In Dean Forest, it would appear, that a vast supply of iron may be produced. In Ireland, through the active exertions of Mr. DILLON CROKER, not only will a large quantity of iron be manufactured; but the condition of the peasantry of that fine, but unhappy country, greatly ameliorated; in the surest way, plenty of employment, and good wages. Another vast advantage to the country, from the extension of the iron trade, is the fact of its being more generally diffused through the kingdom. Iron can only be made to advantage where the ore, or stone, with coal and lime, abound; consequently, the two northern counties of England are now likely to become important seats for iron manufacture. Newcastle has several extensive furnaces; but all her ironstone, ore, and lime, are brought from a distance. The neighbourhood of Whitehaven, on the opposite side of the island, abounds in hematite ore, but it is of too rich a character to fuse without the admixture of other stone, which must also be brought from a great distance; yet both at Newcastle and Whitehaven, excellent iron is made—coal being plentiful at an easy rate.

The Newcastle and Carlisle Railway passes through a district rich in mineral products, hitherto comparatively little known; and that company has at present a bill before Parliament for a short extension of their line from the Haltwhistle station into the well-known rich mineral district of Alston Moor. This station is 22 miles from Carlisle, and 40 from Newcastle, and occupies nearly the summit level of the line. The attention of capitalists has been drawn to this point, as a most desirable one for smelting operations. The manor of Haltwhistle is full of coal, which, from the analysis of Messrs. MITCHELL and FIELD, is of excellent quality for smelting, as well as for domestic use, and for coke. The finest mountain limestone and freestone is abundant; and extensive fire-clay works are in full operation within half-a-mile of the railway. In the manor also, most extensive mines of excellent ironstone have recently been discovered. The new railway from Alston will bring down—Alston being on a still higher level—the rich iron ores found by Messrs. ATTWOOD to exist, almost without limit, in the boundless wastes of Alston Moor—while such quantities of hematite as may be required for improving the quality of the metal, can be brought direct from Whitehaven by railway—thus concentrating every requisite for the erection of furnaces to any extent within the manor, and within a few yards of the Newcastle and Carlisle Railway, which communicates with the sea at Newcastle on the east coast, and Port Carlisle on the west—so that a more eligible position for iron-works on an extensive scale, can scarcely be found. The hitherto thriving and rapidly increasing city of Carlisle will, most probably, become a place of great importance in the manufacture of steam-engines, &c., &c. The simple fact, that no less than five important lines of railway, will meet in one common station at Carlisle, and that the station is to be one of the largest in the kingdom, shows that such a probability is by no means remote. Already a nucleus exists in three iron foundries; and a very able mechanic (Mr. BLAYLOCK) has commenced the manufacture of engines, boilers, &c., with great success; and, doubtless, from the local advantages of situation, of water and railway communication, cheapness of fuel which Carlisle possesses, many will soon follow his example; and we expect soon to see this part of the kingdom participating in the benefits of the iron trade

The importation of British sheet iron into France, free of duty, is at length about to be conceded by the Minister of Commerce, under a Royal ordonnance, as a boon to the shipping interest. This is a measure which we have long predicted would ultimately be the case, from the impossibility of the French ironmasters being able to meet the wants of the Royal navy or merchant marine for this new building material in naval architecture. The Government has patiently watched the progress of the trade for some years,—but is at length aware, from reports of engineers of the Royal School of Mines, and other sources, that it will be an indefinite time before the French mines can be made to produce anything like sufficient for the demand; and to prevent any unnecessary delay in this active branch of industry, it is believed that a Royal ordonnance will immediately be issued, admitting cast and sheet iron for shipbuilding duty free. The progress of iron shipbuilding in this country has roused the energies of our Gallic friends, and raised a desire of imitation in this branch of art. The subject was warmly discussed during the last session; and a large portion of the deputies, as well as the Ministers of Marine and Finance, were in favour of the measure. The proprietors of mines were, as a matter of course, opposed to it,—although aware they could not supply the demand themselves. The Government, however, appears determined to act as it judges best, for the welfare of commerce, regardless of the intrigues of the monopolists. The *Moniteur Industriel*, and other Paris journals remarkable for their anti-English principles, are rather dismayed at this decision, which they represent will be the ruin of the French forgemasters. The *Industriel* properly remarks, "that it does not merely require a few thousand francs to work large foundries, but millions." England has that advantage, with inexhaustible supplies of materials,—while in France both are limited, and at high prices, which will not allow competition with England, Belgium, or Sweden.

In the usual place in our columns of this day will be found the last sale of ores at Swansea, amounting to nearly 30,000*l.*, the major part consisting principally, as usual, of the rich South American ores. One particular feature, however, in this sale, is a quantity of rich ores from the copper mines of South Australia, on which we have given every information during their progress, in the last 12 months more particularly. These mines are now beginning to develope themselves; and, on the 22d instant, there were sold—four parcels of Kapunda ores, 300 tons, the highest price realised being 23*l.* 13s. 6d., and the lowest 19*l.* 4s.—the whole amounting to 6437*l.*; two parcels from Montacute, 95 tons, realising respectively 16*l.* 3s. and 17*l.* 2s. 6d., and amounting to 1570*l.* 6s. 6d.; and 24 tons of Kaw-aw, amounting to 188*l.* 16s. The total quantity sold was 419 tons, and which returned 8196*l.* 2s. 6d. We call attention to the produce of this highly favoured colony, as there is every probability that the shipments of ore to Swansea will now be continuous, and increasing in quantity; and the sale to take place on the 5th Aug. next partially bears us out in this remark,—as there is for sale, on that day, four parcels of Burra Burra ores, 188 tons, and two of Montacute, 37 tons, together 225 tons,—and which will, doubtless, bear out the high character which these mines have acquired.

In the MINING JOURNAL of last week, we briefly alluded to a meeting of pursers, agents, and adventurers, in tin mines, for the formation of a "Mining Property Protection Society," which was held on the 16th instant, at the Guildhall, Penzance. It has long been a subject of very general complaint, that, by the present method of disposing of tinstuff from the mines, a system of peculation has insensibly arisen, by which the adventurers are defrauded to an unknown extent—indeed, it was mentioned by JOHN BATTEN, Esq., who was called to the chair, that he knew one individual who had stamps, who had sold 400*l.* worth in 12 months; and although there was no legal proof, it was strongly suspected to have been surreptitiously obtained from Ding Dong Mine, a great portion under the name of "leavings." The principal tin mines in the Penzance district were represented, and a series of resolutions passed, for which see our advertising columns. The feeling was unanimous, that the time had arrived when such a society would meet with general support; that the basis on which it should be established to be, that all tin should be taken to market on owners' account; that no "leavings," or other portions, should be at the disposal of the workmen; and that notice should be given to all the tin smelters in the county, that they might not lawfully receive any other parcel than such as were duly sent from the adventurers' agents. The resolutions, which were 11 in number, were drawn up by Messrs. DAVEY and ROSCORLA, and were unanimously adopted; and their general purport was to the effect, that great facilities existed for defrauding adventurers, and that more efficient means should be adopted for the prosecution of offenders—that no purser, or agent, be permitted to leave any small parcels of tin or tinstuff at the disposal of the labourers—that rewards should be given for such information, or such as would lead to the discovery of any theft upon the property of the adventurers—that, for raising a fund to carry out these proposals, a subscription *pro rata* on all the ores raised, be entered into—that the owners of land, being interested, be requested to join such subscription, and not to grant (what are called) free setts, or working the halvans of abandoned mines. Mr. BATTEN was appointed treasurer, and Mr. ROSCORLA, solicitor. A committee, consisting of Messrs. SCOBELL, BORLASE, CARNE, LEY, PIDWELL, COULSON, WEARNE, RICHARDS, TREMBATH, and J. BENNETTS, jun., was named to carry out the general details. Messrs. BATTEN, DAVEY, B. P. BATTEN, PEARCE, and HIGGS, were named as a finance committee; and the whole affair taken up with that spirit which bids fair, not only to save in future the property of adventurers in tin mines, but also, by decreasing the facility for plunder, which has hitherto existed, to establish a more moral tone of feeling among the miners, who, of course, think but little of the dishonesty of these acts, in proportion as they can commit them with impunity. We doubt not the "Mining Property Protection Society" will work exceedingly well in detail, and induce the formation of similar institutions in other districts where they may be required.

Our attention having been called to the progress of that important institution, the Museum of Economic Geology, in connection with the Mining Record Office, we have taken some pains to ascertain a few particulars respecting their present position and progress, which we with much pleasure lay before our readers. The present offices occupy Nos. 5 and 6, Craig's-court, Charing Cross. The Geological Survey Office is in the same building; but, from the increasing accumulation of documents, other apartments are employed in the Deanry, Duke-street, and Whitehall-yard—thus the officers, and their assistants, pursuing inquires, tending to one common end, are divided, when it is highly desirable that every convenience should be afforded for carrying on their proceeding on the same spot, which should be roomy, commodious, and entirely unconfined. On the geological survey are Sir H. DE LA BECHE, A. RAMSAY, Esq., Profs. OLDHAM, J. PHILLIPS, E. FORBES, W. W. SMYTH, and Dr. HOOKER; at the museum are Dr. LYON PLAYFAIR, R. PHILLIPS, and R. HUNT, Esqs. The objects are to ascertain the geological structure of our island by actual survey, and the mineralogical nature of the country; to accumulate the largest possible collection of specimens to illustrate the useful application of geology, and all the sciences relating to it; to exhibit a history of the metallurgical arts; to collect illustrative specimens of the mineral and lithological wealth of the kingdom; to illustrate the science of geology in a comprehensive manner; and to exhibit models of mining machinery and of mines, plans and sections of mines, and statistical information, which are deposited in the Mining Record Office, and a valuable collection of railway cuttings, geologically coloured. An extensive library, relating to all the branches of science and of history, bearing on the objects of the establishment, is also in progress of formation. The premises in Craig's-court were only taken as a temporary deposit; and 30,000*l.* having been voted by Parliament for a suitable erection, a site has been fixed on in Piccadilly, to which, when completed, the public are to have free access, in order to be enabled to study the really valuable and important stores which it will then contain. In addition to which, there is to be a lecture-room, in which the officers will deliver lectures, at stated periods, to which the public are to be admitted on the lowest possible terms. Few can afford to purchase the maps; and it is highly desirable that no time should be lost in giving the public the means of acquiring the valuable practical information which will be then in store for them; and we doubt not that, when complete, this establishment will prove a great national ornament, and reflect the highest credit on the Government, and all parties concerned.

SUCCESSFUL MINING ADVENTURES—DIVIDENDS.

The following is the amount of dividends paid by 20 British Mines, in six months—from January to June last:—

Mines.	*Amount.*	*Per Share.*
Devonshire Great Consols	£22528 .. or ..	£22
East Wheal Rose	19200 .. or ..	150
Carn Brea	6000 .. or ..	6
West Caradon	5760 .. or ..	22½
United Mines	4000 .. or ..	40
Wheal Seton	4455 .. or ..	45
South Caradon	3840 .. or ..	30
Wheal Trelawney	3120 .. or ..	12
North Roskear	2450 .. or ..	35
Callington Mines	2000 .. or ..	2
Botallack	1500 .. or ..	15
Trenow Consols	1280 .. or ..	5
Chypraze	1539 .. or ..	10½
Trethellan	1200 .. or ..	10
Stray Park	1000 .. or ..	1
Treviskey	960 .. or ..	8
Tresavean	768 .. or ..	3
Balleswidden	690 .. or ..	—
West Providence	384 .. or ..	1½
Wheal Brewer	360 .. or ..	3
Total amount	£82,734	

QUANTITY OF COPPER ORE SOLD IN CORNWALL,

BY PUBLIC TICKETING, FROM FORTY-ONE MINES.

[*Continued from last week's Mining Journal.*]

Mines.	*No. Ticketings.*	*Tons.*	*Amount of Money.*
Brought forward from last week	36479	£93636	2 6
Brewer	2	169	565 11 0
Wheal Kayle	2	166	556 18 6
South Wheal Francis	1	63	537 11 0
Barrier	2	90	438 2 6
Penstruthal	2	63	379 1 0
Wheal Vyvyan	1	86	373 10 0
West Wheal Treasury	1	84	317 5 0
Wheal Garland	2	59	314 3 0
North Wheal Basset	3	56	305 16 0
Andrew and Nangiles	1	57	294 13 6
Comfort	1	46	241 13 6
Ting-Tang Consols	1	50	241 5 0
Wheal Busy	1	82	208 7 0
Wheal Clifford	1	52	202 9 6
Redruth Consols	1	21	183 15 0
North Downs	2	36	172 8 0
Wheal Rodney	1	41	157 5 6
Providence Mines	1	64	152 0 0
Carn Perran	1	48	145 19 0
West Trethellan	2	45	143 11 0
Charlestown United	1	12	126 0 0
Wheal Butler	1	47	121 9 6
Hanson Mines	1	31	109 8 6
Cook's Kitchen	1	33	100 13 0
Wheal Bucketts	1	28	88 18 0
Williams's East Downs	1	17	81 3 6
Great Polgooth	1	7	76 2 6
West Grambler	1	10	56 10 0
Wheal Penrose	1	11	55 5 6
North Pool	1	16	46 8 0
Herland	1	10	43 6 0
East Relistian	1	4	36 16 0
Wheal Treasury	1	9	31 1 0
Pengilly	1	2	26 2 0
Wheal Brook	1	4	25 6 0
East Crimnis	1	4	23 8 0
South St. George	1	7	21 0 0
Wheal Catherine	1	4	18 16 0
Wheal Henry	1	4	18 2 0
Pembroke	1	1	6 15 0
Wheal Sally	1	2	4 2 0
Total	38,060	£200,683	19 0

MINING IN THE CHANNEL ISLANDS.—Some months since, we gave a passing notice of the progress of mining in the Channel Islands, particularly in the Island of Sark, where an argentine lead mine had been opened under the most favourable prospects, and presenting indications of a peculiarly rich ore, in a highly remunerative lode. This lode had, as we learnt, been advantageously worked until an irruption of water into the mine put a temporary stop to it. To carry off this water an adit has, as we further learn, been recently cut, so that the work may be shortly renewed. For the following interesting particulars, in relation to the Sark Mines, we are indebted to a correspondent in the Island of Guernsey, from whom we have had occasional communications of considerable interest on mining, and other subjects connected therewith:—"There are (writes our correspondent, under date of the 11th inst.), in this island (Sark), three lodes laid open, and on which the company has hitherto worked with a return adequate to the expenditure. The first lode (or No. 1) is now worked at a depth of 180 ft., and yields muriate of silver—viz.: 45 to 50 per cent. of lead, and about 50 ozs. of silver to the ton. No. 2, about 50 per cent. of lead, and 55 ozs. of silver per ton—its present depth is 30 ft. No. 3, at the time the work on it was suspended by an irruption of water, yielded rich silver ore, commingled with copper, in the following proportions—viz.: from 150 to 300 ozs. of silver per ton, and about 15 per cent. of copper. This last is considered to be one of the most promising lodes in Europe, in so far as it has been as yet explored. The water will, it is expected (continues our correspondent) be drawn off in about a month or six weeks, and the miners will be enabled to resume their work about the middle of October. I have, however, been informed, that longer time may possibly be required to prepare and put up effective pumping machinery. This lode had been worked to the depth of only 48 ft. at the time of the mine being overflowed; and it increased in richness from 150 to 300 ozs. of silver per ton progressively up to that time—so that, should it increase in the same ratio, it may safely be assumed to be in yield of silver one of the richest lodes in Europe. The company have a lease of these mines, with a term of 28 years unexpired. The lessor, Mr. Le Pelly (who is also lord of the manor of Sark) receives as rent, or dues, 6 per cent. on the net produce of the minerals. The number of shares I do not know, but the company consists of only 20 proprietors at present. The shares are at a premium, and will, it is expected, rise considerably after the work is resumed in No. 3—that being, beyond all proportion, the richest and the most productive in silver of the lodes as yet opened." Thus writes our correspondent, who we have reason to believe to be as well informed on the subject as accurate in detail of the circumstances connected with these mines. Of the little island of Sark—or rather the two islands of that name, and distinguished as the "Greater and the Lesser"—we gave a description on a former occasion, when referring to the mineralogy of the Channel Islands. We shall watch with interest the progress of the working of these particular and most promising mines; and with the aid we trust to receive from our intelligent and obliging correspondent, will give, from time to time, in the *Mining Journal*, due notice of it to our readers, who, doubtless, feel an equal interest with ourselves in the prosperity of the Channel Islands.

Original Correspondence.

TUTWORK AND TRIBUTE.

Sir,—When I read John Budge's first letter upon the subject of the tut-work and tribute system adopted in the mines, and his proposition to substitute day labour for it, I could arrive at no other conclusion but that of his mental capacity having been, from some cause or other, subjected to a twist of no ordinary kind; whether a mathematical one, a trigonometrical one, or from whatever cause it may have arisen, it is evident, from his second letter, that something of the kind has happened, as he has contrived to twist my letter into an admission of the correctness of his views, in suggesting such a strange and unaccountable proposition; and, as if he wished to make it still more apparent, he has suggested that, before I presumed to become a controversialist, I should take instructions in the "New School"—or, in other and plainer language, I should place myself under his tuition, and become more familiar with the principle upon which he has founded his theory, that I might be better prepared to controvert it. I do not know whether John has arrived at this conclusion from any mathematical demonstration he has worked out; but, to my poor weak understanding, it does seem a strange mode of preparing a man to become a controversialist. Perhaps, by examining his letter a little further, we may obtain a little more light.

A correspondent, whose letter appeared in the Journal of the 11th inst., under the signature of "A Mole," has endeavoured to extricate John from the dilemma into which he has brought himself, by attributing to him a feeling of sympathy with the working miners; but he, nevertheless, could not avoid remarking, that John had "begun to meddle with things too hard for him"—and, verily, there is much truth in this; but I question whether John can be made to understand it, because it is one of those facts which cannot be demonstrated by mathematics, nor by logarithms. "The Mole," however, was working in the dark when he attributed sympathy to John's motives. His only motive was to have a slap at the "arrogant, bigoted, vain-glorious, and superficial" bal captains, who, being a parcel of "untaught, undisciplined, uneducated men," and having declined to submit to be taught by John, and to be made mathematicians of, have excited his ire, and are become the objects of his displeasure and denunciations. It has been said, that "a little learning is a dangerous thing;" and, certainly, the truth of this axiom was never more clearly evidenced than it has been in the instance of John Budge; for, if the result of it be to claim for the possessor of it perfection in all his views, and to attribute idiotcy to every person else, it is, indeed, a dangerous thing to possess.

John's proposition—to substitute day labour for the "sorry practice of tutwork and tribute"—is a wholesale and sweeping condemnation against every individual who has been engaged, and who continues to be engaged, in mining, in manufactures, in agriculture, and in every other undertaking throughout the world, in which men could be employed by contract, instead of being engaged as lazy, indolent day labourers; and, if the question were put to any man who possessed a disposition to exert himself for his own benefit, and for the advantage of those who may be dependent upon him, whether he would prefer working at day wages to being engaged by contract, I believe that it would be found the very reverse of what John would lead us to expect. The indolent and lazy man, who would prefer day labour, could not be induced to perform a day's work where there was nothing by which the *quantum* could be ascertained, and when he had no inducement to exert himself.

It is passing strange that, notwithstanding so many political economists of great talent and ability have given so much of their time and attention to the question of economy of labour—that so many first-rate manufacturers, who have had the greatest opportunities, by experience, of testing the most advantageous modes of employing men—that mining has been carried on for ages under the control and management of practical and experienced men—I say, that it is passing strange, that, under all those circumstances, such an evil should have been suffered to exist down to the present moment—if it be such an evil as John states it to be; and what is still more strange is, the fact, that the great luminary of Callington should not have made this discovery at an earlier period of his life. This can only be accounted for upon the principle of its being a subject which required the most intense thought and attention; and that it never would have been found out, if he had not at first discovered a new theorem in Euclid, or a new rule in mathematics—to this alone we must attribute the delay.

Be this how it may, I am afraid that there is something in John's rule by which he has been enabled to arrive at the conclusion he has come to—so thoroughly beyond the comprehension of mankind generally, that it never can be acted upon for any useful purpose; and I will endeavour to explain why I think so. John's rule appears to me to involve a principle which learned men are sometimes apt to fall upon—that of endeavouring to get rid of the effect, but still retain the cause; and, as cause and effect are admitted to be very intimately acquainted with each other, I am much inclined to expect that a great difficulty will be experienced in the attempt to separate them. John informs us, that those "arrogant, bigoted, vain-glorious, superficial, undisciplined, untaught, uneducated" bal captains, are governed in the price they set upon a fathom of ground by the gettings of the men, and not by any knowledge they possess, independently of that circumstance, as to what should be paid for it—that, in fact, they are incapable of any judgment in the matter—and that, in consequence of their extreme ignorance, the men sometimes earn 5*l.* and 6*l.* per month, and sometimes only 1*l.* One would have thought that, if the agents had been governed by the mens' gettings, they would, or could, so arrange the price as to have insured something like a uniformity of amount to be paid monthly; but this idea arises from my ignorance of John's rule—consequently, I must take it for granted that he is correct, because it is a mathematical demonstration. John proposes to remedy this by paying the men so much per day, and that a check should be kept against the men by the agents measuring their work daily, when it might be found that in the first day there was driven 1 ft. 7 in.; second day, 1 ft. 5 in.; third day, 1 ft. 10 in.; fourth, 1 ft. 8½ in.; fifth, 2 ft.; and so on.

Now, there are two points here upon which I must ask John for a little light.—1st. Who is to be the judge as to the quantity of ground that *should* be driven for a day's work? I do not find that he proposes to make any alteration in the management; and, as the requisite quantity of ground to be broken must involve a question of judgment in the agents, I should be glad to be informed, how those untaught and uneducated captains, who are incapable of deciding how much should be paid for driving a fathom of ground, can be considered competent to decide how much ground should be driven for a certain sum to be paid? I dare say that the difference arises from the point to be decided—having a reference to the quantity of ground to be driven, instead of the amount to be paid for it; and I shall be much obliged to John if he will work it out according to his rule.—2d. After the first question has been answered, I would ask, why the men should only drive 1 ft. 5 in. on the second day, and 2 ft. on the fifth day, being paid the same amount for each day's work—or, if they drove 2 ft. in one day, why it should be considered that they had done justice to their employers by driving only two-thirds as much ground on another day? Is it to be accounted for by the ground being harder on one day than on the other? How is this to be decided unless the agents be present at the time of its being broken, or they can exercise a correct judgment by examining it afterwards? It is upon this judgment that John relies; and yet he retains those untaught, uneducated, and superficial agents to carry out this plan of his. But John absolutely recommends the very mode to be adopted by the agents which he had previously condemned; for he proposes that, at the end of the month, the captain should sum up his book, and, according to the result of this summing up, he is to decide whether men have done fair work for their wages. How is this to be decided, if the captain be no judge of the ground, and of the price he should name for driving a fathom?—or, if he be capable of a correct judgment in those matters, what advantage is gained by putting the men upon day labour, and of placing the agents in the position of being called upon daily to watch the men, and to abuse and insult them every day instead of once or twice a month? He is to "warn and admonish the men daily;" and this is a part of John's remedy for protecting the men against those hectoring and abusive captains.

John tells us, that cases have been known where men have slipped from the true branch to avail themselves of easier ground; and that, at some future period, this has been discovered by finding the other branch with a rich course of ores in it. This is quite true; such errors have frequently been made, and such will continue to be made—in fact, they are continually occurring; and John might even go further than this, and he would find that many mines have been abandoned through poverty; but, on being resumed by other parties, they have become productive and profitable concerns. Are we to understand, that this has arisen from the system of "tut-work and tribute;" and that if day labour had been substituted, such things never would have occurred? If so, will John explain how they would have been prevented? Those are occurrences which no foresight could avoid; they are the consequences of the difficulties which attend mining operations, and would have occurred if the agents had been men of first-rate talent, aided by the best education that could be given to them. Indeed, agents of mines have been brought up in the study and practice of their profession. They commenced when boys to perform the same kind of work which they have to superintend when agents; they have grown up in the practice of it, and it is from the most intelligent, and those who exhibit the best practical knowledge, which they had acquired in the practical school of labour, that they are chosen and fixed upon for the situation.

One word to "A Mole," with whose sympathy for the working miner no one can quarrel. It is difficult to understand whether he really advocates John's proposition, or opposes it. In one sentence he would appear to be favourable to it; and in a succeeding sentence, he would seem to be in opposition to it. One thing may clearly be gathered from his letter; which is, that, though he might have gone underground with a night captain—it was not because it formed part of his duty—he clearly is not a practical miner. I would persuade him, however, not to join himself with John Budge in endeavouring to excite the workmen against the agents. The pretty little tale about the prayer underground, could only have been given for the purpose of exciting compassion for the men at the expense of the agents—a thing that the latter by no means deserve. If he has long resided in the mining district, and been at all conversant with mining, he must know that, of all men, the agents are those who can, and do the most truly, sympathise with the men under them. Those agents were, as I have before observed, working men themselves; and in the experience they had whilst such, as to the contingencies to which they were liable, and having, when pay-day came, a small amount to take home to their families, they can feel for their suffering fellow labourers when such things do occur, and would willingly, were it in their power, relieve the distress of which they are witnesses; and it is a piece of the foulest slander against them of which John Budge was guilty, when he accused them of "detestable hectorings and unmanly and unmerited abuse." Nothing can be more detestable than the epithets which he has indulged in towards them; and "A Mole" will obtain no credit by seeming even to countenance him in the use of them. I think, too, that "A Mole" is a little too severe in his charge against the miners' wives in their dealings for necessaries. That there are some unscrupulous and indifferent women amongst them, there can be no question; and in what class of society will you not find some such, without the excuse of poverty to defend them? But there are many—indeed, I may say the great mass of them—who are careful, honest, and industrious women; who, if circumstances should compel them to run into debt, do not forget the obligation when they may have the means of acknowledging it. As regards the men—a more intelligent, nor a better conducted, set of labourers, as a body, is not to be found in any part of the world; and nothing can speak more in their favour, for being careful and industrious men, than the erection of the numerous cottages, and the enclosure of the little patches of land, principally the labour of their own hands, to which "A Mole" has referred; but would they ever have had an existence if the system of tribute had been substituted by day labour during the last 50 years?—Never. Nor is this the only advantage resulting from it. Hundreds—I may say thousands—would never have found employment but for it. No man is compelled to take a tribute pitch if he did not wish to do so; but every man, who knows anything of mining, knows that, in thousands of instances, ground that has been taken by men on tribute would never have been wrought otherwise; that thousands of fathoms of ground would have remained to this time unexplored; and many thousands of tons of ores, which have been brought to market by tribute, would never have been, otherwise, extracted from the earth; and many mines would long have ceased to be worked but for the tribute system.

As to substituting day labour for tutwork, so that the men might earn higher wages, it is nothing more nor less than a proposition to pay a larger amount for breaking the same quantity of ground. Let this be carried into effect, and let the amount for labour be increased 30 per cent. above its present charge, and how many mines in Cornwall are there that would not sink under this extra expenditure? This would be the evil which would vastly increase the difficulty which may be at present experienced, by throwing a very large number of men entirely out of employment.

A word to John: let him beware how he continues to insult the agents, by repeating such slanderous epithets of them, or he will find that some of those untaught and uneducated agents will use their pens in a way that will make him blush—no: that would be impossible; but they would convince the world that his charges against them are nothing but foul libels; and that his ignorance of the details of mining are upon a par with his impertinence, in designating them "arrogant, bigoted, vain-glorious, superficial, untaught, undisciplined, uneducated." One of the Old School.

London, July 17.

TUTWORK AND TRIBUTE.

Sir,—Having read Mr. Budge's letter of the 13th June, on "Tutwork and Tribute," I cannot help thinking that, if he had been a working miner for some 10 or 15 years, as most of those *sinecurists* (called in Cornwall *underground captains*) have—he would have less reason to abuse the excellent system now pursued of working mines on tutwork and tribute—a system which long experience has proved to the most intelligent and scientific men, is the best adapted to the nature of Cornish mines; and although Mr. Budge's theory may appear very specious to the inexperienced reader, the *practical man* cannot but suspect that this gentleman has but a very superficial (if any) knowledge of Cornish mines, notwithstanding his having insinuated that he has acted in the capacity of mine agent,—but which, from his desire to *simplify the accounts*, I suppose we must interpret mine clerk. But as this is immaterial to the subject, I shall proceed to show the impracticability of the scheme. And first, every one who has seen a section of a Cornish mine, and has any knowledge of the plan of working, must know that the workmen are greatly scattered—so that it is impossible that any agent, or reasonable number of agents, can pay that attention which is necessary to be paid to men working by the "stem," and having no motive to stimulate them to industry but their "*principles*." I will suppose an instance—say a mine 150 fms. deep, and 200 or 300 fms. long, with a level at every 10 fms. depth, through which are scattered here and there 200 men—no more than two being in one place (and there are several such mines in Cornwall). This would require several agents to see every "pare" five minutes in each "core;" for it must be understood, that he cannot see but one "pare" together, unless in a few instances,—and I must leave it for you to calculate, at your leisure, how many agents it would require to properly conduct such a mine on Mr. Budge's plan. Mr. Budge seems to have framed his objections to the present system, on the casual changes of the ground from hard to soft, and *vice versâ*,—and evinces a want of practical knowledge, by adopting the only standard known to an unpracticed eye—viz.: the cost-book; and if, by following this rule, he commits the most egregious errors, which he is sure to do, the company who employs such men to manage their mine deserves it, and should not blame the judgment of the individual, but their own judgment in appointing one who is not practically acquainted with his profession. Now, the *practical man* has a more sure standard; for, having by long experience proved the nature of every kind of ground, he judges what he himself could work it for, and earn the wages allowed to the operative; and his practical eye can take advantage of, or make allowance for, the various facilities or obstructions to the working of such grounds, in the shape of *heads*, *slides*, *vugs*, &c., which the inexperienced would pass unobserved. Again, Mr. Budge's system would "rob the adventurers of all the judgment, experience, and interest," of that enterprising class of men called *tributers*—a class of men on whom the *existence of many poor mines* in Cornwall entirely depends; for, let the working of many of those mines depend entirely on the skill of a few mine agents, and those discoveries of bunches, branches, parallel veins, &c., which keep many poor mines at work, and often raise some of them from obscurity into flourishing concerns, would be of less frequent occurrence, and thousands of those whose interests are now enlisted with the mine adventurer, and whose business it is to search for "hid treasures," which can only be brought to light by dint of skill and perseverance, would be deprived of their employ, and others reduced to a mere automaton for want of that variety of skill which is developed under the present system, by the *persevering*, *industrious* tributer, whose eye searcheth out every precious thing. J. W.

Kilbricken Mines, July 7.

TUTWORK AND TRIBUTE.

Sir,—With reference to the letters that have lately appeared in your valuable paper on "Tutwork and Tribute," I beg leave to state a few reasons in defence of that system which has been so long adopted, not on account of its "antiquity," but simply because I believe, from practical experience, whether it be regarded on the ground of mutual interest, or as a system calculated to stimulate to proper exertions, is, I conceive, well worthy of being continued until something better is proposed, than to put miners to work for "fixed wages." And, although there have been vast improvements made in many things connected with mining, the system in question seems hitherto to have bid defiance to any further improvement; and thus our forefathers, upon this point, are well worthy of being spoken of with deference and lasting respect. My reasons are these:—1. That, if miners have fixed wages, it would be necessary to have a captain to superintend the working of every pitch night and day, in order to get sufficient work done; and that would increase the number of officers to such an extent, that their attendance would not compensate for the additional outlay for salaries.—2. That good workmen would not feel the same interest when working for fixed wages, as they would by contract; that they would very soon sink into a state of indifference with regard to the *quantum* of labour to be performed; and that there would be constant necessity to urge the men to do their duty, which would inevitably (some cases, perhaps, excepted) lead to quarrels, misunderstandings, and frequent dismissals.—3. That if three pares of men were at work in one pitch, a part of them being diligent and faithful, the other part the reverse, it would be impossible to detect the latter, without a competent person remaining with them day and night, or at least to see the beginning and ending of every core.—4. That wherever there is an intelligent, spirited, workman, making the best use of his powers and capacities, and ready every moment to "seize and improve the shortest intervals of possible action and effort," and always acting upon the motto of the pickaxe on the old seal—"Either I will find a way, or I will make one"—there you will find a person, who will either *stimulate his comrade* (who might be of a different disposition, or less skillful) to *greater exertions*, or would *separate himself* from him; and, in both cases, his own interest, and that of his employers, would be promoted; and this would not be acted upon to the same extent, if men were working for fixed wages—for, in the one case, it would be the interest of the spirited workmen to stimulate, to instruct, and to communicate; and in the other (the fixed system), the prevailing principle would be *self-improvement* (would it have been more correct if I had said *self-indulgence?*), and, in too many cases, *careless indifference*.—5. That all mining captains are (I suppose) *practical men*—men possessing a good share of common sense and intelligence; and, from practice and experience, it is quite reasonable to suppose, that they are competent to put a *fair price* for driving a fathom of ground; and from the belief, on the part of the agents, and also the workmen, that so many fathoms of ground (in most of places) MIGHT, or SHOULD, be driven *in a certain time*, it is calculated to call forth into exercise the best energies of body and mind, and might be considered as the *grand stimulating cause* of activity, perseverance, and praiseworthy exertions, in mining.

I have now, sir, furnished you with a few reasons in defence of setting by piece-work, which, without troubling you with any more of them, would, I think, be sufficient to convince every unprejudiced person, that it is the best that could be adopted. I know nothing whatever about Mr. Budge, with regard to his occupation. In his first letter, on the subject in hand, I was led to conclude that he was, or had been, in some office connected with mining; but, in his letter of the 6th instant, I have a demonstrative proof, that he knows nothing practically about these matters. To keep a weekly record of drivings, &c., according to circumstances, would, in my opinion, be advantageous: it has been long adopted; but to keep a *daily record* would be a very great absurdity. Perhaps, Mr. Budge will have the goodness, for the benefit of all "accomplished captains," to furnish answers to the following queries:—1. Supposing that three pares of men were employed in driving a level, worth 10*l.* per fm., what method should be taken to take *exact* daily *measurements* of each pare of men's work?—2. Where there are three pares of men at work in one pitch, and a few of them diligent and faithful workmen, the rest the reverse, and it being quite evident that there is not sufficient work done, through indolence or incapacity, how is it to be found out which of them are to be blamed for the deficiency, except there be a superintendent for each core, day and night?—3. Assuming it to be possible that correct daily measurements of all sorts of ground could be taken, how is this to be done at changing time in every pitch (which would be absolutely requisite to do), except officers be employed for this purpose?—4. Are we to understand that levels are to be "squared up" at the end of every core, so that a correct registry might be kept of the ground driven by each party?

If Mr. Budge were to go underground to some of the mines in his own neighbourhood, to witness the operations going on there, the darkness in which he is at present enveloped, with *reference to practical mining*, would, I expect, after some good training, entirely disappear; and, instead of viewing matters through a *distorted medium*, his "glasses" (which I believe, without any flattery, are of the best description) would get a *good cleaning*, and thus he would soon be able to view mining matters in a clearer manner than he appears now to do; and, perhaps, would become a zealous advocate to perpetuate the practice of the "old system." This would be the result of true conversion and nobleness of mind; but can this be expected from a gentleman who has already pronounced the "main staff of mining officers" as being "ignorant," "lazy," "bullies," "superficial," and "ruffians?" Yes; for we have heard of men of the highest intellect, who had devoted all their powers and masterly eloquence to *build up a system*, which they once endeavoured to *destroy!* Whether Mr. Budge's sweeping charges were intended by him to apply *locally* or *universally*, is best known to himself. However, there is one consolation to them whom he has endeavoured to depreciate, their capability and conduct, in the estimation of their employers, that he is not invested with such a privilege and power. Does he imagine that respectable adventurers and directors, &c., of the celebrated mines of Cornwall, are entirely devoid of all *intellect* and *experience*, of *sound judgment* and *wisdom*, and thus rendered incapable of knowing whether those men are such characters as he would fain have the public to believe them to be? I am inclined, from what I have heard and read, to hope better things concerning them. But are there no exceptions. Yes, certainly. But how many? A *few*. Well, the favoured few have great reason to be thankful. The best argument which Mr. Budge has advanced in favour of his new scheme is, that the miners are *rewarded* for holding back!! This, perhaps, would do very well if *drapers* and *grocers* were the mining captains. But, I suppose that, in Cornwall and everywhere else, instead of giving a *premium* for such conduct, they would be allowed to reap the fruit of their misdoings. I am, sir, inclined to believe that you will agree with me in condemning those low expressions which Mr. Budge has made use of, as being beneath the dignity of the scholar, the Christian, and the gentleman; and if they are to be considered as fair specimens of the expressions of the *learned men* of Callington, what are we to expect from the *illiterate* of the same quarter? If the amelioration of the condition of his countrymen, or the destruction of certain characters, for what they cannot help, or do not possess, or both, be his object, I think he has taken a very wrong course to get them accomplished; and that the weapons which he has furnished for his own purposes, will be handled against himself. Let it not be supposed, that I make these observations in a vindictive spirit—no, the very reverse is the fact; what I wish to see carried on, would be—a *fair discussion* without *abuse*. When I began to write this paper, it was my intention to say something in reference to the "farthing pitch," &c., but as it is already too long, I shall defer saying anything more for the present, but may, Mr. Editor, with your permission, resume the subject some other time.

Although I do not approve of Mr. Budge's new scheme, I have no desire of withholding my "meed of praise" for a work of his, called the *Miners' Guide*; I saw it some years ago, and had then the pleasure of rendering assistance to a friend, in working out some problems which it contained; and I am free to admit, that it is well worthy of a place in mining offices and mining colleges, as a book of reference. An Observer.

Newtownards, July 15.

MINE SURVEYING.

Sir,—I perceive that, instead of meeting my letter by fair argument, or endeavouring to disprove the truth of my assertions, Mr. Budge has again had recourse to his favourite and oft-tried weapon, personal abuse, whilst, at the same time, he charges me with having been guilty of this fault,—but, so far from it, I beg to assure him, that I am too much disgusted with his example, in this respect at least, ever to follow it. Had your paper, Mr. Editor, been circulated in the neighbourhood of Callington only, Mr. Budge's letters would have remained unnoticed by me, and regarded as perfectly harmless, as here the writer is fully known, and I believe his usefulness properly appreciated; but as it finds its way into other districts, I felt it my duty to bring this gentleman to the *test*, who will, doubtless, find that, however clever he himself might have been in *testing*, the analysis of Prince's metal ("mettle") will be found more puzzling than even this man of experience at present imagines; and when the mighty man of valour makes his appearance on the field, he will also find that "The — Miner" will not be so far intimidated as to "drop his pistol," or to exclaim *in the sublime language of* "Oh! I feel my courage oozing out at the tips of my fingers." It would be folly in Mr. Jack Absolute to effect not to know

who I am; and he can, if he pleases, make arrangements at once for trying the mettle of—THE — MINER: *Callington, July* 21.

TUTWORK AND TRIBUTE.

SIR,—I am much pleased, but not surprised, at noticing the lively interest that you take in this great question, for surely a subject of higher importance to mining never occupied the columns of the Journal. I am prepared to expect the most determined and violent opposition from the "agency," or, if they cannot write themselves, from their hirelings; for it is well known that the *contract* system is their stronghold, and the moment it is powerfully attacked, they well know that *their craft is in danger*. It is *this* that has elevated them, and it is *this* that keeps them in the office for which 49 in 50 of them are altogether unqualified. Let us now lay the axe at the root of this poisonous tree, and give our view of the radical reform we would recommend in working our mines by fixed wages, instead of "tutwork and tribute."

Let no underground captain have more than 5*l.* a month; for if we want to spoil a good working miner, we have only to give him the pompous name and office of "captain," give him seven or eight guineas a month, and set the work of the mine by "contract," and then we make "a thing" of him. Dismiss or reduce these overgrown captains; and with their ill-deserved salaries, appoint a set of men from among the most active and intelligent miners, and make (what is called) "gangers" of them, or "overseers" of separate rounds in a mine, each one having as many pares of men under his charge as he can well superintend. Give these working officers 4*l.* a month each: they are to remain underground all the time of the core, and relieve with the men. They are to furnish the manager with the measurement of the work done every day, and report progress to him, or to his head captain, if it is necessary that there should be such an officer. Let the working plan be kept up well and perfectly, following close on the heels of the workmen, that the manager may order the drivings, &c., in the most judicious manner. Let the miners be paid *weekly* like other labourers; for by the day-work system, we can pay 500 men in about 20 minutes; and those who cannot attend the pay table, can direct either their comrades or friends to take up their money for them—here we have no humbug about bal bills, or materials, or subsist, or anything of the mistakes, contentions, and *miseries* attending the abominable jobbing practice. It is true, this will give the purser *something* to do for his great salary; but we presume that gentleman will be willing to put himself a little out of his usual tract for the public good, and where the benefit and satisfaction to all parties is so evident.

An opponent, in a Cornish paper, says—"I am not a friend to the miner, because I would rob him of his setting-day holiday." In reply, I say that "holidays" are among the greatest evils that come across the miner; and, generally, one holiday does him more injury than a month's work. The very nature of mining, sir, lays a peremptory prohibition against holidays, where the heavy cost of drainage, agency, wear and tear, &c., is constantly going on, whether the men work or play. Ask any candid miner if ever he spent a holiday, or neglected his work, without subsequent regret; and how often have those pernicious holidays caused him to return to his labour, rendered irksome to him by the penalties of revelling, and he has gone underground with a weakened body and an unhappy mind?

If one holiday in seven had not been enough, our Lawgiver would have ordained more; and no man enjoys the pleasure of his seventh celestial holiday like the man who has stuck heartily to his work throughout the preceding week. Remember who has said, "Six days shalt thou labour."

As our system of reform does away with all setting-days and pay-days, it necessarily does away with setting-day and pay-day *dinners* to the agents and "their many friends," with port and sherry, and count-house punch, on *owners' account*. By-the-bye, Mr. Editor, this is a *pitch* on *owners' account* that I don't expect one of my opponents will raise a single objection against. I presume they will make *this* one of the *exceptions*. One of these dinners, sir, in a large mine, costs the company enough to drive from 10 fms. to 20 fms. in moderate ground—or, in a decent pitch, to break and bring to grass 100 tons of ore. Oh! it is a shameful custom.

Callington, July 21. JOHN BUDGE.

MINE SURVEYING.

SIR,—"The — Miner" appears to consider the letters of Mr. Budge as a prelude to an extensive assault upon mine agents generally, and with this view commences an attack (apparently upon the defensive) on that gentleman. It does not require much penetration to see through "The — Miner's" subterfuge. If mine surveying is, in some instances, imperfectly understood, and if it is of the importance supposed to be, a general diffusion of the principles and practice of the art must be attended with great good. In the discussion on surveying, let every contributor look upon the question as a public one—let each advance his mite—let no bad feelings manifest themselves—and, above all, let enquirers not be afraid to ask. We shall then, most probably, follow the track pointed out by Mr. Budge; and in place of occupying the pages of the Journal with effusions no very creditable to their writers, and dangerous to the cause upon which they profess to treat, we shall improve ourselves, assist others, and foster a friendly spirit amongst mine agents generally. The ignorance of a few will be dissipated before the knowledge of the many.

Anxious to divert the discussion into such a channel, I propose the following question—not that its erudition deserves a place in your Journal, but that it may serve as a stepping stone by which all may at once place themselves upon neutral ground:—An error of 30′, or $\frac{1}{2}$°, is committed in a bearing of 50 fathoms length: what is the variation occasioned by it, or how far will the station peg be out of its true place? OPTIMUS.

Blackburn, July 22.

THE SUPPLY OF BLAST FURNACES.

SIR,—In last week's *Mining Journal*, Mr. R. Mushet, of Coleford, reports a discovery in the mining world far more astonishing than any on record. Who could have ever contemplated, or imagined, that iron has been made in Staffordshire, South Wales, and Scotland, for so many years out of the wrong stuff? Why, sir, every stratification, by which the mineral basin of South Wales is formed, I well know—from the limestone up to the tops of the highest mountains—and I never heard that any one of those strata, except the regular ironstone veins, contained iron in sufficient quantity to pay for smelting; and in the South Staffordshire mineral basin, there have been perhaps 10,000 pits sunk through the whole coals and mine measures from top to bottom, and some of them have even gone into the limestone. How have these people managed their business?—have they made such an egregious mistake, as to use the worst iron mine, and fling away the best, for so many years? Where does this hidden treasure lay? Can it be in the limestone? or is it in the red sandstone beneath the limestone? or is it the greywacke ironstone?—if either of those, I suppose they have never hitherto been examined by either Welsh or Staffordshire miners. But I do think, that had it been in either of those, the Scotchmen would have discovered it ere this—for it is said, a Scotchman leaves no stone unturned. I agree perfectly with Mr. Mushet, that no writing geologist, or mineralogist, ever has been (and never will be) of any service to the miner; but let Mr. Mushet explain himself fully on the subject, and prove what he has yet only hinted at, and he will have a monument erected to his memory on the top of the highest mountain in the South Wales basin—the Staffordshire folks may put one on Dudley Castle Hill, and the Scotchmen on the top of Ben Nevis, or where else they please. However, be that as it may, many of your readers will be anxiously awaiting a further communication on this important subject from Mr. Mushet—whose letters, I may add, are always read with interest in this district. T. DEAKIN.

Blaenavon, July 20.

THE COAL TRADE—WISDOM OF MONOPOLY.

SIR,—I am a pretty large coal contractor: I ship on the average from 5000 to 6000 tons weekly, and hold contracts to various parts of the world. Amongst them I have the management of one for the French Government to the ports in the Adriatic. I am bound by this contract to deliver my coals in French bottoms; I cannot ship in any other. Mark the wisdom of this. For French vessels I must pay from 26s. to 28s. per ton freight. English vessels I could freely obtain at 17s. per ton freight, with a certainty of having the coal delivered in much better condition, and with much greater regularity. But no; the French Government say you must deliver it in "French bottoms only," and underline the words. I do so. The one pays me as well as the other would, but they pay me 10s. per ton more for every ton of coals delivered than they would require to do if they allowed me to ship in vessels of any nation—150 per cent. more than the first cost! All the other coal contracts for the French Government have the same conditions. So much for the wisdom of monopoly!—A. B. C.: *London, July* 23.

GREENHOW'S GEOMETRICAL RAILWAY.

[*An Exposition of the Dangers and Deficiencies of the Present Mode of Railway Construction, with Suggestions for its Improvement.* By C. H. GREENHOW, author of the Geometrical Railway. London: John Weale, 59, High Holborn.]

The object of this publication is to suggest means of suppressing the causes of accidents on railways. The frequency, the dreadful character, of the disasters on the actual lines, are as many reasons of praising and supporting any attempt made for rendering railways as safe as they ought to be; and any project, presented to the public with such recommendations, is worthy of its serious study. We must receive with respect, with applause, any trial made for the general interest—there always results something from it, either in a direct or indirect manner; this is for Mr. Greenhow's object, for his intentions, but, as intentions are not everything in railway questions, we must proceed to the facts.

The accidents on railways, according to the statements of the author, are owing to the irregularities of the rails, and the bad fitting between them and the tire of the wheels; and these reasons of maladjustment are still increased by the sinking of one side of the way, and the resilience of the rails.

We shall not discuss with the author, whether the whole, as he pretends, or only a part, of the accidents are owing to these reasons; some accidents are, no doubt, the consequence of their existence—we shall only examine the value of the means employed to avoid them. These means, Mr. Greenhow draws from the admirable works of Nature—the limbs of animals offer a perfect, strong adjustment; Mr. Greenhow fits his tires of wheels to the rails in the same manner—he borrows from Nature the *concave* and *convex* forms.*

We agree plainly with the author, *as regards the propriety of deriving information* out of such a sublime source. It is not in his own works that man can find true and perfect models, and any master-piece of human work is but an imitation of Nature.

When we are seeking in this large repertory of perfections for some form, some disposition, to fulfill some mechanical object, we see that all these forms are continually varying, because continually their object varies—every object requires different means, different forms. Let us then first study our object, and Nature will offer us some proper form to fulfill it.

In what manner does the tire of the wheel act, as regards the rail?

When a flat wheel is rolling over a flat rail, every part of the surface of its tire is successively applied to an equal surface of that rail: there is then no *friction*, there is only *superposition*. *Friction* is produced by the application, one against the other, of two surfaces moving in inverse direction, or with different speed—so that the same part of one surface is brought into contact with several parts of the other: such is the difference between *superposition* and *friction*, that it has been found, that in the first case, the size of the surface *rolling* does not produce any difference in the resistance; whilst, in the case of *friction*, the resistance increases with the size of the surfaces in contact.

Let us try now which of these two facts takes place in the round rail with concave tire adjusted to it. If we consider the point *a* (*see fig.* 1), placed at the top of the rail, on the perpendicular from its centre to the axle, this point is in contact with a corresponding point on the tire of the wheel, which point, in its revolution round the axle, will describe a circular line, which will be applied to a straight line equal in length, traced along the top of the rail at the point *a*—there will be superposition between these two lines, or the small surfaces they represent. If we come round the rail to the points *b*, *c*, *d*, *e*, these points are the same, covered by other points on the surface of the tire: the lines to be traced at these points on the surface of the rails will be all equal to that traced at *a*; but the circular lines described by the corresponding points on the rib these points being further from the centre will, of course, be longer in proportion to this difference, and, therefore, applied to shorter surfaces; they will present no more *superposition* but *friction*, and *friction* on the whole of the tire, except at the point *a*.

It is easy to appreciate the necessary result of round rails for general resistance on railways by this simple reflection, that the enormous weight of one ton can be moved by the fall of eight pounds, and this is obtained by causing in the wheels the *rolling* surface, the tire, to have all the length of the distance travelled over; whilst the surface in which there is *friction*, the axles, are only the twelfth or the fifteenth part of it. What can we expect from a disposition in which the axles will remain the same, and friction will exist at the end of a lever, such as the tire of the wheels?

Nature has adjusted the limbs of animals by convex and concave forms, because they are destined to move with *friction*, and in a great number of directions; the bearings of any machine are exactly disposed as the limbs of animals—only their motion being only in one plan, the cylindrical concavity is taken instead of the spherical.

Round rails would produce the effect of a continual wedge, and in curves, the surface of the rail, and that of the tire, being two kinds of inclined planes, the centrifugal force would easily make the one be raised over the other.

The second part of the improvements proposed consists in changing the direction of the spokes of the wheels, instead of the usual perpendicular ones. Mr. Greenhow inclines his spokes from the tire to the centre of the carriage at an angle of 22½°: the advantages arising from this disposition are, says the author—first, to render the wheel less liable to get out of the rails; second, to avoid the chance of the carriage falling down on one side of the way, by removing, much further than with ordinary spokes, the point at which the centre of gravity of the carriage might overhang its point of suspension on one of the rails.

We do not approve at all of the importance given to this disposition of spokes, to the spokes themselves; because, what are the spokes but material connections between the tire and its axle?—and if we suppose the tire to be placed towards the rail in the same position in which Mr. Greenhow disposes it—viz.: that the concave surface to cover 90° of the rails, from the point marked by the perpendicular on its centre, the form of spokes will not necessitate at all, a change in this position of the rib, and it can be connected with the axle either by a spoke inclined inside, (C, *fig.* 1), or perpendicular

Fig. 3.

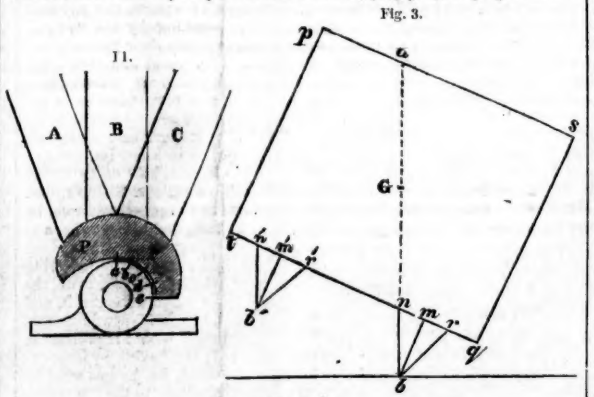

Fig. 1.

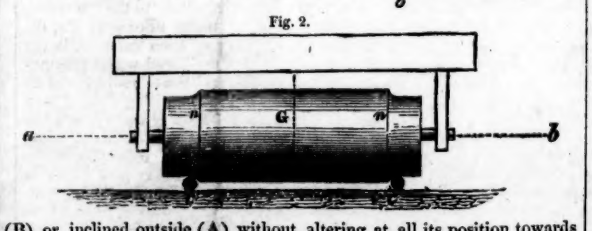

Fig. 2.

(B), or inclined outside (A), without altering at all its position towards the rail; any of these forms of spokes will besides leave the centre of gravity of the carriage to be placed on the line perpendicular to the middle of the rails, when the two ribs are laying on the two rails. Supposing that one side of the carriage was to be raised, and the carriage revolve on the other rail as a fulcrum, in any of these cases the motion of the rib around the rail would be the same for the same angle, and the starting point being the same, there would be no more danger of getting out of the rails in one case than in the other.

To illustrate this fact, that the form of spokes is without any mechanical effect, we shall say, that a carriage, its axles, its wheels, are nothing else than a solid body, laying on four points, immoveable as regards the body itself—because, in the revolution of the wheels, a new surface is always brought on the rail to replace that removed.

It will be easy to understand, that the form of spokes is without any influence upon the stability, by only reflecting, that the axle of a carriage, with its two wheels, is exactly in the same mechanical position as if they were altogether a large roller, G (*fig.* 2); the weight is transmitted to the axle (*a*, *b*), in the same manner: from the axle to the tires, and the rails (*c*, *c*,) in the same manner; and, if we suppose that, after we have made the part (*m*, *n*,) of the roller, touching the circular rail, to be exactly the convex tire proposed, we reduce the middle of the roller, between the rails, to the size of an ordinary axle, and we have to support the tire only a sufficient part of the metal; we shall make this part either perpendicular or inclined, inside or out, or of these three forms together, the weight communicated to the axles, will always be transmitted to the rails in the same manner; because the metal is quite rigid, and the plan in which the tire revolves, the centre round which its revolution is effected, remain unchanged.

Making the axles massive and heavy between the rails, would bring lower down the centre of gravity of the carriage; but this is not appreciable in Mr. Greenhow's case. We think, as everybody does, that carriages, being destined to horizontal motion, the perpendicular form of spokes is the most secure; and the most economical, is that under which the least quantity of metal has the greatest strength.

If we take the very figure (*fig.* 3) used by Mr. Greenhow, for demonstrating that the point at which the centre of gravity overhanging that of suspension, is removed by the inclined spokes, we shall suppose the body, *p*, *s*, *t*, *q* (*fig.* 3) having three different rigid supports — one perpendicular, two inclined (one inside, and the other out); but, coming all to the points (*b*, *b′*) this body, being raised on one side, is caused to revolve on the other point (*b*), until its centre of gravity (G) is exactly placed on the line perpendicular to that point; in this position there will be no tendency for it to fall on either of the two sides. Let us suppose, now, that we have got only the perpendicular support (*b m*, *b′ m′*), and the inclined out (*b r*, *b′ r′*), and still the centre of gravity remaining the same as in Mr. Greenhow's figure, will hang exactly above the same point of support: such will again be the case, if we have only *b r*, *b′ r′*, —the supports inclined outside. Inclined legs, when laying on the same point as perpendicular ones, will never increase the stability of a table; they increase its cost, its liabilities to accidents.

Should these first parts of Mr. Greenhow's proposals have proved a more serious basis, we might have come into greater details of his proposal for making one of the axles capable of uncontrolled motion, so as to adjust itself to the direction of the curves. We shall only observe, that this motion, chiefly being *uncontrolled*, will be most liable to be produced by any impediment occurring on the rails exactly the same as by a curve; and that such axles would, probably, never allow the wheel to revolve parallel to the rails. We do not know what would be the effect of a carriage, some 15 ft. or 18 ft. long, suspended at each end, so as to produce the effect of a pendulum; the height of the suspended body being so very little, in comparison with the length of the line of suspension, it might very well happen that one of the ends of the carriage would oscillate on one side—whilst the other would oscillate on the opposite. All these details would require special experiments on a large scale, to know exactly what would be their results; but we can affirm at once, that any disposition tending as this to make the carriages a springy, oscillating body, the resistance of which constantly changes in place, in value, ought to be entirely avoided. We have in railways quite enough of springs and mechanisms; and the value of the general resistance would be much less, much more certain, were these springs not required for the carrying of those fancy goods called passengers.

In short, we have found, in Mr. Greenhow's pamphlet, the *exposé* of some clear and right principles, showing a perfect knowledge of the laws of moving bodies; but the consequences drawn from these principles are far from being carried out by the means proposed; the round rail would much increase the general friction of the wheels, without any proof of its not increasing the danger of running off the line. The inclined spoke cannot be considered but as a geometrical illusion; and, as regards the suspension of the carriage, the moving axles, we shall only observe, that any new mechanism in railways is a new chance of accident—a new cause of expense; that it is not at all necessary to construct railway carriages so articulated that they can perform without danger any kind of acrobatic exercise. It would be much better to avoid any chance of this motion in the carriages by a greater stability of way; the absence of too much resilience in the rails; a larger conical flange; the independence of wheels one from the other; and curves of the largest possible radius.

We have expressed our opinion in a clear and open manner; we would have been personally most happy to partake of Mr. Greenhow's views, to express on them a favourable opinion. We publish this, because we think a justified disapproval a greater mark of regard than a blind and unjustified adhesion.—N. A. BURNIER: *Dufour's-place, July* 22.

P.S.—We are glad to see that our rather inexplicit *exposé* of the Barometrical system has still conveyed to the mind of M. X. ("Engineer, Blackfriars-road"), a simple and clear idea of the subject. We should recommend to this good gentleman, in his quality of engineer, to support always his observations by some arguments or figures; we do not see exactly why, to perform a certain operation in one hour, would require a greater power than to perform it in five minutes, as it is now done.

M. X. must give us time to explain to him, and to the other engineers, the practical application—the capabilities of the Barometrical system; all we have said until now are but premises very necessary to enlighten the subject, to establish the principles of railway locomotion upon its natural bases. We have proved that none of the actual systems of locomotion presents the characteristics of *economy* required for a *definitive system*. We shall prove in good time, that the Barometrical system presents these characteristics—that it is altogether economical, safe, rapid.

In order to make M. X.'s mind more familiar with the barometrical system, we shall invite him to cross over Blackfriars-bridge, and he will behold on the gas-work premises the exact model of a barometrical apparatus, capable of exhausting in less than five minutes, and working 25 miles of a 12-inch tube—this diameter being sufficient, when we shall have obtained that a "*good working pressure of mercury*" will draw a train corresponding to it. The resistance of such a cylinder, for the work proposed, would be equal to 120,902,176 lbs., raised to 1 foot, and would be raised for the operation of working by 60-horse powers in one hour—2·4-horse powers a mile (our cylinders will be constructed to work one mile each.)

We join here, for the benefit of M. X., the calculation of the system of working, proposed by him as the only *legitimate* one.

We suppose that M. X. exhausts continually his reservoirs to 20 inches, and that he works his railway at 15; any other corresponding numbers will give the same results; and we should not, as practically acquainted with the question, advise M. X. to exhaust too much his reservoirs, if he wants to conserve for hours rarefied air in them.

Taking the capacity of the propelling tube to be equal to the size of each reservoir, what will be the number of reservoirs necessary to exhaust it? —*Ans.*: Three.

What number of reservoirs will be necessary to withdraw the air from the tube, and produce traction.—*Ans.*: Three.

Total number for one operation—6.

What will be the power necessary to exhaust one of these reservoirs, supposing that it is left, after the operation at 15 inches, and we want to raise it to 20 inches?

The space to be opened for this purpose by the pumps is [Table iv.] $\frac{4}{10}$th of the capacity; the power on every square inch, allowing a little saving of steam in the beginning of the operation, is at least 9½ lbs. on every square inch—thus the power for each reservoir is represented by $q = \frac{4}{10} \times 9\frac{1}{2} = 3{\cdot}7$ for the six reservoirs = $3{\cdot}7 \times 6 = 22{\cdot}2$. As the useful power at one-half exhaustion is represented by $1 \times 7{\cdot}3$, we compare these two quantities, and obtain from the proportion 22·2 : 7·3 :: 1000 : 328; the loss ·672 per 1000.

We really think that something larger than the Thames Tunnel entrance would be necessary to hide the working engines, and the bulk of this legitimate apparatus.

If the air pumps, instead of exhausting reservoirs, were employed to fill them with compressed air, a less volume would be necessary; but the loss would be much more considerable, because the compressed air, being used at a certain pressure, would be rendered to the atmosphere

* "A train on a railway," says Mr. Greenhow, "when moving at a very high speed, is a *projectile*, is subject to the laws of *projectiles*." From this axiom, true for any train moved by a locomotive engine, we can establish a great distinction between the chances of accidents, presented by various systems of motion. When the train is a projectile, the whole of its impelling force presses it in a straight line. A curve is an anomaly—a circumstance quite opposite to the motion of the train; the whole of the power tends to throw the carriages out of the line. But with a stationary power constantly applied in the direction of the road, the train is no more a projectile—the power, which moves it, acts constantly in the direction of the rails; the momentum is the only part of it acting as a *projecting* power: this will explain the reason of a great difference of safety between various systems.

at a considerable degree of compression, and all the power employed to produce this compression would be entirely lost. One of the great advantages of rarefied air over compressed air is, that the air operated upon by the working engine can be usefully employed, though it does not possess power enough to act upon the train.

Compressed air is *expelled*, rarefied air is *collected*, in the operation of working.—N. A. B.

THE SUPERIORITY OF COMPRESSED AIR AS A MOTIVE POWER.

Sir,—No doubt, many of your readers are beginning to think that, since I made the promise, in your Journal of the 2d of May, of showing that compressed air was superior to anything yet known as a motive power, I have discovered my inability to do so, or else that promise would have been performed before now. The cause of the delay has arisen from a different source, which, however, it is not my intention here to explain,—but proceed at once to my task. There would be many advantages arising from the use of compressed air as a motive power, or as a means of communicating motive power, which are not obtainable from the use of any other principle. One great advantage this principle possesses over any other is, that it will yield back in any part of the country whatever amount of power may have been spent in its production in any other part of the country—of course, minus the friction of machinery, &c. This being the case, the necessity for steam-engines, whether stationary or locomotive, will, when this plan has been fully developed, be nearly (if not entirely) obviated, which is another, and by no means small, advantage possessed by this principle—for it must not be forgotten, that many horrible accidents have been caused through the use of steam-engines. There exists, at all times, in various parts, and frequently in every part of the country, a vast amount of unappropriated natural power, or the source from which power is derived. All that is wanting, is some simple arrangement, by which this bountiful supply of power may be collected, stored up, or conveyed by pipes or tunnels to wherever it may be of service. Often have I thought, and am now confident of the fact, that every acre of land in this country may be highly cultivated, without the aid of animal or steam-power: the realisation of such an idea must tend to improve the social condition of man. Another advantage of this system is, that parties requiring motive power, whether occasional or constant, would not be under the necessity of going to the expense of erecting a steam-engine to obtain that power—it might be supplied much more economically by companies formed for that purpose, as well as gas or water may be.

However, before the plan is adopted on so large and comprehensive a scale as has been hinted at, it must have a gradual and practical development,—and which development being the object of my writing, I shall commence by supposing a case, to illustrate my plan. Suppose, then, at stated intervals, a certain amount of power was for some purpose required—it is well-known that, if the creation of any amount of power to be used at intervals can be so distributed as to keep the machine from which the power is to be derived constantly at work, storing up the power in such a manner as to be able to obtain at any time the whole of that power without depreciation in its value, a great saving will be effected. If a machine was set at work, compressing air into a receiver of *fixed* dimensions, the expansive force of the air would be constantly increasing, and the maximum effect of the engine could not, by any mechanical contrivance, be secured; and when the compressed air, or stored-up power, was withdrawn or used, from the receiver of *fixed* dimensions, its expansive force would continually diminish, and the desired result—viz.: a definite amount of power for a definite period—could not, by such an arrangement, be obtained. Again, if an expanding receiver or cylinder, with a piston accurately fitted, and loaded with a weight sufficient to give the air the required force, was used, it would come very expensive: also, a considerable portion of the power of the machine would be lost by leakage and friction,—but if a receiver, into which water was admitted by a pipe passing out through its bottom, and communicating with a reservoir of water of sufficient elevation above the receiver to yield the requisite pressure per inch, was used, the maximum effect of the machine would be *effectually* secured, and the desired result as effectually obtained—for, if air was forced in at the upper part of this receiver, it must acquire a pressure equal to the pressure of the water in the receiver, before it would be admitted, and, when in, it would have no opportunity of expanding or escaping by leakage; and for every admission of compressed air, a quantity of water of equal bulk would be displaced,—and if the receiver should at any time be filled to the bottom, and down the pipe to a level with the upper part of the bend, where it was turned up towards the reservoir, the air would then escape up that pipe: it would be the safety valve, by which all the air that was introduced after the receiver was filled down to the point spoken of, would escape, and thus a rupture of the magazine would be prevented, and nearly a *uniform pressure at all times maintained*. And if a larger supply of power was required at one time than another, or at longer or shorter intervals, a larger magazine would obviate the difficulty, and prevent any loss of power from such cause.

I hope the above description will enable persons taking an interest in the matter to understand something of the nature of the plan proposed. I will now speak of it in reference to its application to railway purposes. The first thing to be considered is, the amount of power, directly applied, requisite to drive a train of such weight as, it is probable, would have to be driven at such and such times, and velocities, &c. I shall leave it to practical men to determine what that amount of power may be; but if a 15-in. tube, with a working pressure of 12 lbs. to the inch, does for trains of ordinary weight, one of 8-inch diameter, with a pressure of 45 lbs. per inch, will yield a greater working power. Now, it appears to me that, if two-thirds of the quantity of metal used in making the large tube was used for the smaller one, it would have greater strength in proportion to the increased pressure it would have to sustain: if ribs were cast on a tube for compressed air, they would be of more service in preventing its bursting, than on a tube for rarefied air to prevent a collapse—for, in the former, they have to resist compression, the separating strain being borne by the whole length of the interior of the tube; but, in the latter, they have to resist separation,—and, as they are some three or four feet apart, each rib has to bear all the separating strain on the tube for that distance, and every body knows for which of these two purposes cast iron is best adapted; but I am of opinion, that pipes of 8 in. diameter, with an opening or slit, could be made of wrought iron without ribs, but thick opposite the opening, and diminishing towards it, so as to give them equal strength in every part. For the purpose of easy explanation, I will suppose this plan to be applied on a short line of railway—say of 10 miles in length, with a station at each end, and one about half-way—with 8 in. tube, and travelling power, 45 lbs. per in. of the piston, and trains to start from each end every half-hour in the day, and complete the distance in 10 minutes—the up-train arriving five minutes before the down-train started, and *vice versâ*. A quantity of compressed air, equal to the capacity of the tube, would have to be supplied every 15 minutes—a magazine capable of supplying that quantity should be provided at each of the end stations, and one at the intermediate one two or three times as large: they should communicate with each other by an iron pipe passing along the line of railway, and a steam-engine (for the present) should be placed at the *intermediate* station only, competent to supply the requisite amount of power. Now, if the magazine of the capacity stated had to be made of iron of sufficient substance to bear a strain of 45 lbs. per inch, and if a building had to be erected with a reservoir of water at the top, of such height and dimensions as to answer the purposes previously explained, the expense would be an insurmountable obstacle to the carrying out of this plan. But I propose to sink wells to the requisite depth—which, to give a pressure of 45 lbs. per inch, will be about 109 ft.—the one at the intermediate station should be 4 or 5 feet more than the others. The bottoms of these wells should be enlarged, and a magazine formed in brick-work, with an iron pipe ascending from its top, connected with the traction and communication pipes. The object of the magazine, or rather the safety valve, at the intermediate station being at a greater depth than the others, is to prevent the air escaping before they were filled. The well or shaft to be the channel down which water is to be supplied to the magazine—the top of this well to be surrounded by a reservoir; when a train arrives at either of the stations, a valve should close up the tube, and prevent the compressed air from escaping, and a pipe should convey it back to the cylinder of the air-pump, to be used over again—of course, the air-pump would be a double-acting one; and the compressed air from the tube, entering through the bottom of the cylinder during the piston's ascent, and through the top during its descent, would cause the piston to be moved up and down with but little aid from the steam-engine at the commencement, and a cylinder nearly full of compressed air would be driven into the magazine at each stroke. It is not of particular consequence whether the magazines are situated exactly at the stations or not. They may be disposed in some convenient situation near the stations. There are various other details which require explanation, but I will not at present trespass farther on your valuable space.

I intend, in my next, to describe the valve for closing the longitudinal opening of the tube, and also a valve for the use of both principles—I will likewise describe a new method of extracting the air from the tube simultaneously without a loss of power; and, if used in combination with compressed air, without any additional engines. John Weston.

IRON TRADE OF AMERICA—MOUNT SAVAGE IRON-WORKS.

Sir,—Having been detained for a day or two at this place, I have availed myself of the opportunity to pay a visit to the Mount Savage Iron-works, now becoming celebrated for their active operations in manufacturing railroad iron. These works are situated on the south fork of Jennings' Run, a tributary of the Wills' Creek, which empties into the Potomac at the point on which stood old Fort Cumberland, the site of the present thriving town from which I address you. From this place to the works, the distance is nine miles, traversed by a railroad built by the Mount Savage Company, and connected with the present terminus of the Baltimore and Ohio road. With the Mount Savage road, two branches are already forming connections; one at the mouth of Braddock's run, intended to convey the coal of the Maryland Mining, the Boston, the Washington, and the Lanaconing Companies; the other joins the main road below the iron-works, and is designed to accommodate the Cumberland, the Alleghany, the Clifton, and the Frostburg Companies. All these corporations, together with some individual operators, are expected to send coal to market during the ensuing season. The Mount Savage road is not limited in its usefulness to the transportation of coal. All the ore and limestone at present used by the furnaces at Mount Savage works is carried upon it from the immediate neighbourhood of Cumberland, or at least not more than two miles from the town. The ore is exactly of the same general character as that used at Bloomsburg, Catawissa, Roaring Creek, Danville, and other works. The strata containing it repose on both flanks of Wills' mountain. The upper portions of the town of Cumberland rest on the denuded edges of its beds. Both the hard or silicious, and the soft or calcareous ores, are found in the same relative position as at Montour's ridge, in Columbia county, Pennsylvania. The latter kind only is at present mined for the works. The limestone comes from that member of the series of rocks which lies immediately above the fossiliferous ore formation. It is taken from a remarkable cliff which I remember in former years as rejoicing in the uphoneous name of "The Devil's Race-course"—a rough, sharp, bold, horny projection, which seemed to defy the assaults of every thing except super, or subter-human agencies. The iron men, however, have already shorn it of its rude infernal grandeur, and the speed with which fragment after fragment, block after block, came tumbling, bouncing, thundering from hundreds of feet above to the road-side below, told clearly enough what work of demolition those pigmy beings whom we could discern "high up upon the mountain crag," were intent upon producing. Those imps have already made sad havoc among the elements of nature's sublimity. After ascending the Wills' Creek, to the mouth of Jenning's Run, and passing up the latter stream to the junction of the north and south forks, we come to the first members of the coal formation, about six miles above Cumberland. In this part of its course the road has a grade of 100 ft. per mile, and the total ascent from Cumberland to the furnace heads is nearly 600 feet. Seven years ago nearly every perch of ground now occupied by the company's establishment was an unbroken forest. Now, from 100 to 200 buildings occupy the valley, or adorn the hill-sides. Two furnaces of 14 ft. boshes are in constant and vigorous action, making from 200 to 260 tons of pig-iron per week. A third furnace of larger dimensions than the others is in rapid progress, and is intended to be put in blast within three months. An extensive rolling mill is devoted exclusively to the manufacture of railroad iron—using for this purpose the products of 16 or 18 puddling furnaces, and working up all the pig metal made at the two blast furnaces above mentioned. The Baltimore and Ohio Railway Company, are about entering into contracts with the Mount Savage, for iron to relay the part of their road east of Harper's Ferry. The operations of the iron-works are not limited to the production of railroad iron. A foundry of considerable extent is occupied in producing machinery for additional works—but at present the foundry pig-iron is procured from other works. A fire-brick manufactory, with separate steam-engines to grind the fire-clay, with drying rooms and kilns, supplies all the demands of the company, and yields, doubtless, some portion for the market. A certain quantity of coal is also sent to market over the Baltimore and Ohio railroad. A new and powerful blowing machine has just been established at these works, having a blast cylinder 10 ft. in diameter, and a 10 ft. length of stroke. With this is connected a regulator, consisting of a spherical air-tight vessel, 25 ft. in diameter, and, of course containing, with the connecting pipes, upwards of 10,000 cubic feet of air. In the short intervals between the successive strokes of the engine, this large body of condensed air supplies the immediate demands of the tuyeres, without creating any material variations of pressure. A mercurial gauge, constantly connected with the regulator and conducting pipes, showed but very slight oscillations, not more than a tenth of an inch of mercury. The average pressure under which the blast is delivered to the furnace, is 2½ pounds per square inch. The air passing the bellows, at the time of observation, was at the rate of 4671 cubic feet per minute for each furnace, which, after allowing for leaks, would not probably exceed 4500 cubic feet per minute, delivered to the furnace, or about 220 tons of air in 24 hours, and, consequently, 15 tons of air at most to one ton of pig metal produced. In order to produce this weight of metal, it was stated that they used 2 tons of coke, the product of 3 tons 6 cwts. of raw coal, exclusive of what is used for the blast engine and, for heating the blast. The trunnel head gases are not economised at all in this establishment, nor did I remark any means of adapting the puddling furnaces for the application of gas to that process. It was also stated, that 2¼ tons of ore, and 1¼ tons of limestone are required for the ton of pig-iron. If these data be correct, the total quantity of solid matter thrown in at the top of the furnace is 5½ tons per ton of metal produced. Hence it requires two and three-fourth times as much weight of air as of all the solid materials to produce a given weight of pig metal.—W. R. J.: *Cumberland, Maryland, March* 21.

MINING IN IRELAND.

TO THE EDITOR OF THE CORK SOUTHERN REPORTER.

Sir,—When Bruce, after a vast deal of privations and hardships, reached the source of the Nile, and was pointed out a few green sods from which several small springs were bubbling up, he was for some time in doubt that his guides were imposing upon him, and thought it almost impossible that this majestic river could proceed from such an insignificant source; and when Lander, the bold and enterprising traveller, who I had the pleasure of knowing, amidst difficulties and dangers of a most formidable nature, succeeded in tracing the mysterious Niger from the interior of Africa to the ocean, and found that it emptied itself by several mouths into the Western Atlantic, he was greatly delighted, but equally astonished, to think that the different mouths of the Niger were only so many off-shoots from a great source—but, when united, this dark and mysterious river was apparent in all its majesty and grandeur, with the numerous sons of Ham, full of their wild and savage superstitions, riding at ease in their curiously-made canoes on its still and unruffled waters. The solution however, of this geographical problem was not accomplished without great sums of money, and the loss of many valuable and scientific men; and though it is vain to speculate as to the results of this great discovery, yet from a communication being opened with the centre of Africa, one may calculate that it will eventually lead to the civilization of that country, and the extension of British trade and commerce. Having shown that the celebrated Nile proceeded from a few insignificant springs, and that by following the course of one of the dark and muddy rivers of Bonny or Calabar, you reach the wonderful and mysterious Niger, and that many lives were sacrificed, and vast sums of money expended in solving those different problems, let us, for a moment, direct our attention to other, and no less interesting, objects—to sources like the Nile, however small and feeble at their commencement, that will neither endanger life or property, but will, on the other hand, in their exploration, cause peace and prosperity to abound, where nothing now is to be found but poverty and wretchedness. This, emphatically, is the age of speculation, and among the numberless schemes recently brought before the public, it would be almost a miracle if most of them did not prove to be total failures. It is truly wonderful with what avidity the eager multitude rush head-long into good, bad, and indifferent railway projects: it appeared from the utter heedlessness of a day of reckoning, which is sure to come, evinced by railway-mad speculators, as if their golden dreams were to last for ever? But alas! the terrible realities of calls—bills thrown out—solicitors, surveyors, and engineers bills thrown in—all crowding so fast on each other, that thousands, and tens of thousands will have to be paid, and must be paid, for things that are not in existence, or, if in existence, only to ruin hundreds—perhaps thousands—who have foolishly and inconsiderately rushed with their hardly earned "little all" into the numberless aerial railway schemes. It mattered not where the line was to go—shares would be greedily sought after, and purchased in a projected line from Kamskatcha across Bheering Straits, as from Dublin to Cork, or any other practicable undertaking; every body was speculating. Shares must be had—such was the general feeling—and the finale is, that the bubble which was so long afloat has burst, and left nothing but a wreck behind. It is very far from my intention to condemn or disparage sound railway undertakings, so I am decidedly of opinion that *bonâ fide* lines of railway, if judiciously carried into effect, would prove an immense benefit to the country; and, in making the above remarks, I allude only to bubble schemes. The most favourably situated line, however, cannot be made except by a great outlay of capital, and we very seldom see a line completed at the estimated cost of construction—generally speaking, the cost of construction far exceeds the amount estimated—at any rate it must be a very insignificant line, the making of which will not cost 200,000*l.*—Now, this sum must be expended, and the line completed, before the capital subscribed yields any returns, unless, indeed, the shareholders, after the payment of the first call, receive 4 per cent. of their own money, which amounts just to taking money out of one pocket and putting it into the other; in other words, a shareholder pays on a certain number of shares 104*l.*, and at the end of the year, even while the line is making, he receives back his 4*l.*, which gives him 4 per cent. The various lines of railway in this country, if carried into effect, would cost about 10,000,000*l.* of money. Now, this enormous sum must be expended before they can yield any returns to the shareholders, except in the shape of the interest just alluded to. Suppose, for a moment, that ½, ⅒th, nay, 100,000*l.* of this 10,000,000*l.* were judiciously expended in exploring the mineral resources of this country, particularly this county, I hesitate not to say, and I speak from the experience of many years, and without any fear of contradiction, that if 100,000*l.* were expended, or even the amount of capital for ever lost by the failure alone in bringing out and winding up of projected lines—the mines that would have been laid open and explored by the outlay of such a sum, would have returned immense profits, and proved to the world, that for a mere trifle, as compared with railway speculations, a constant source of wealth and employment would be permanently established, while, on the other hand, tens of thousands of pounds have been irrecoverably lost and squandered, and in their expenditure, instead of benefiting the public, have ruined hundreds. An established mine gives constant employment for ages to the working population, whereas a railway only employs a certain number of workmen during the time of its construction. The whole of the estimated capital for a railway, must be paid up—in mining, in a hundred instances ⅒th of the estimated capital has never been required. In a railway 500,000*l.* may be expended, and the speculation prove after all a failure; in a mine the estimated capital may be 20,000*l.* but before ⅒th or ⅕th of that sum in this county be expended, a competent judge can decide whether or not the speculation is worth following up—and if bad, the shareholders can withdraw from it with a trifling loss—and even in the expenditure of so small a sum as that just mentioned, a considerable part of it would be met by the sale of ore, so that the risk in mining is nothing when compared with the enormous capital required for railways. Is it not, then, very strange, and altogether unaccountable, that people will prefer embarking their capital in railway undertakings and mad schemes that will require the certain outlay of millions, with very distant and doubtful prospects of gain—when, by the expenditure of a few hundreds in working mines, they may realise thousands? Many persons, however, may be sceptical as to the profitable investment of capital in mines, but we will let a few facts and figures speak for themselves, for "facts after all are stubborn things." Tresavean, like many other Cornish mines, was originally worked for tin. About a 100 years ago, a company was formed to work it for copper—one of the principal shareholders was Mr. Williams, of Burneoose. Mr. Williams's share of the profits during this working amounted to 14,000*l.*; but the lode becoming poor and unproductive, the mine was abandoned. Some years since, the late T. Teague, Esq., and others, purchased the mine and machinery thereon, and with an outlay of little more than 1000*l.* succeeded in discovering immense courses of ore—there are about 1300 persons employed in this mine—the deepest level is about 320 fms. from the surface, and the profits have exceeded 800,000*l.*!! Wheal Unity Mine made a profit of 500,000*l.*! Wheal Jewel Mine in 10 years made 400,000*l.*! The Great Consols Mine are about 320 fms. deep—there are about 2000 persons employed, and the cost of working averages about 5000*l.* per month. Formerly these mines, when worked separately, were very rich. Wheal Virgin alone in 5 weeks and 2 days produced ore which sold for 15,000*l.*! while the expense of raising it did not exceed 200*l.*—the average quantity of ores sold from these mines was about 17,000 tons a year, and on the whole left a profit of 400,000*l.* In 1819 these mines were consolidated under the management of John Taylor, Esq. F.R.S. of London, and during 21 years raised upwards of 300,000 tons of ore, yielding 2,000,000*l.* sterling! and leaving a profit to the adventurers of 300,000*l.* Since 1840, when Messrs. Williams and Co., of Scorrier House, commenced working these mines, they have made a profit of more than 16,000*l.*; thus upwards of 700,000*l.* have been gained from a mine about a mile in length, and about 200 fms. in breadth, in which the united length of the levels extends more than 63 miles. The United Mines made upwards of 300,000*l.* profit. Wheal Damsel Mine was worked for some time, and the profits were anything but encouraging. Some of the adventurers relinquished their shares, but the Messrs. Williams, of Scorrier House, increased their own shares by accepting those that were given up—but the increased expense, and unproductiveness of the mine, induced the shareholders to suspend operations at the end of the month, unless some discoveries were made, which happily took place by sinking a winze under the 10 fm. level—the profits in one year from this discovery amounted to 36,000*l.*—on a subsequent occasion the further trial of this mine was objected to, but the superintendent agent obtained leave to drive one of the levels in another fathom. In that short space a change took place in the lode, which soon became rich, and yielded a profit of 160,000*l.* The following mines have also made large profits:—Dolcoath, 150,000*l.*; Cook's Kitchen, a mine not exceeding 180 fms. in length, 300,000*l.*—Carn Brea, 200,000*l.*—this mine, after making such a splendid profit, eventually became poor and unproductive, and was abandoned for many years. About 12 years since, the Carn Brea was resumed by a fresh company, under the management of Joseph Lyle, Esq., and an outlay of about 15,000*l.* was incurred before any returns were made. Since the first sale of ores, however, upwards of 130,000*l.* has been divided, and the profits for the last six months exceeded 9000*l.* In addition to the sum so divided being nearly 100 times the capital embarked, 60,000*l.* or 70,000*l.* has been expended in the erection of steam-engines, machinery, &c., exclusive of the present value attached to the mine, which may be fairly assumed at 150,000*l.*—thus making the aggregate sum of 350,000*l.*, on an outlay of 15,000*l.*!! North Roskear mine has realised upwards of 90,000*l.* profit. Wheal Vor (Tin Mine), 200,000*l.*; and it would be easy to enumerate several others from which immense profits have been derived. The above profits have been made independent of the present value of the mines—value of the machinery thereon, &c. &c.—These mines were not originally discovered by noblemen or great capitalists, but generally speaking were commenced by working miners, who, by following up a steady and persevering course of action, eventually, as they richly deserved, realised many of them splendid fortunes. You may see in Cornwall scores of princely mansions and domains; and if you ask who are the proprietors, you will be told that they or their ancestors derived all their wealth from mines. Mining in Cornwall is such a legitimate speculation and source of wealth, that you will find the landed proprietors—the merchants, the shopkeeper, the hotel-keeper, the tailor, the shoe maker, the working miner, in fact all classes of the community, engaged in its pursuit; and when you see all classes united and determined in doing a thing instead of talking about it, their efforts must, and will, be crowned with certain and abundant success. It was the Cornish motto, "One and all" pulling together that made her the most prosperous county in England, there being not less than 500,000*l.* per annum expended by the mines in labour alone. Some parties may be ready to exclaim, this is all very fine, but what does it prove as regards Irish mines? I will simply answer in reply—it proves that the Cornish mines, which are the most valuable in the world, became such, not by chance or fortuitous circumstances, but by an indomitable spirit of enterprise and perseverance; and only let a tithe of that spirit and perseverance be applied to the County of Cork mines, because it does not require a tithe of the capital to work them, and such a source of wealth will be created as will astonish the most incredulous?—Assertions, no doubt, are very cheap; but let us look at two or three more facts. The Gulleen Mines, just in their infancy, with an outlay of little more than 2000*l.*, have sold nearly 19,000*l.* worth of ore. The Berehaven Mines have made a profit of 150,000*l.*, and the Knockmahon Mines, during the last 10 years, realised a profit of 100,000*l.* The mines belonging to the Southern and Western Mining

Company of Ireland, Gurtavallig for instance, has every indication and appearance to warrant the assertion, that it will become one of the most extensive and valuable in Ireland. The mines also of Derrycarhoon, Crookhaven, Dhurode, and the Mizen-head, in which operations have been recently commenced, present very flattering indications of success—let them be carried out spiritedly and perseveringly, and success must be the result. What, then, is the reason that the vast mineral districts of this country are not fully and effectually explored? Is it for want of money? Surely, if people are willing to expend thousands and tens of thousands on sharp curves, steep gradients, tunnelling, embanking, and railway engineering and blundering—in bubbles, from which no returns are ever expected, might we not reasonably calculate, that they would very much prefer investing their capital in developing the mineral resources of the country, which would not only enrich themselves, but create a constant flow of wealth and employment for the people? Numbers, however, with their eyes open, will invest thousands of pounds in railways, and wait most patiently to see the whole of it melting away like snow before the sun, whereas if the same parties had embarked a 100*l.* in a mine, and did not get a return almost the next day, the speculation would be pronounced a failure, but why, I cannot tell—but such is the fact; others, who are entire strangers to mining speculations and mining operations, from an over sanguine disposition, and a desire to reach the summit of the mountain at a single bound, are not satisfied with an easy and gradual ascent, commence in a wholesale way. The thing is too good to let others have a slice, and the result is, that in nine cases out of ten, they become tired of the speculation, and it is, consequently, abandoned as a failure. But, what is the fact of the case? Does it follow, as a matter of course, because parties expect to reap before they have sown, and from an over sanguine disposition, having kept the whole of the speculation to themselves, and discovered, when too late, that they began to build without counting the cost? Does all this prove that the speculation is a bad one? Quite the reverse. The failure is to be attributed to the cupidity of the individual, not to the concern. Instances might be adduced when individuals commenced mining on a small scale, and on equal terms. But A, not satisfied with half the concern, must needs purchase of B at a high premium—they go on for some time, and all of a sudden a new light bursts upon A's mind, and he discovers that he is *minus* a pretty considerable sum of money. Now, had A been contented with his original half of the concern, and employed his capital in developing and extracting minerals from the bowels of the earth, instead of furnishing new linings for B's pockets, he would have no doubt have worked on, and made the concern a profitable one; but mark the result—A tells you after this that he has lost 1000*l.* by mining; but such an assertion is not true; he may, it is true, have lost 1000*l.*, but how was the money expended? Simply thus:—200*l.* was laid out in exploring the mine, B walks off with the remaining 800*l.*, and thus A becomes *minus* 1000*l.* by his own folly, not by mining. Others have commenced mining on a small scale, with such a certainty of success, that the concern in a few days in their own imaginations, and through representations probably from parties who thought that every schistose rock was *gold*, and all the rubbish which came from their sinkings *here*, and drivings *there*, was solid copper—that it amounted to an insult to offer to join in the speculation. A short time, however, suffices to dispel the illusion—and these parties discover, instead of a second *El Dorado*, that those shining rocks are not *real gold!* and the rubbish, with all the copper it contained, was *real rubbish!* that their pockets have been dipped pretty deeply into and drained of some *real zinc*; and that if they had allowed a greater number to join them, their loss would have been trifling, and the probability is, a concern began by few, and consequently given up as a failure, would, with a greater number, have been carried on vigorously, and become a valuable mine. Because, one or two individuals, *however wealthy*, will never have the courage and perseverance necessary to the effectual development of a mine; whereas a number of wealthy individuals joined together for any particular object will stimulate each other, and being moderate in their expectations, and each holding an interest which, if the thing went to the dogs, the loss would be immaterial, and if good, they would receive ample remuneration for the investment of their capital, never yet ultimately failed of success, and such a party, by perseverance, will meet with greater success in this county than in any other part of the United Kingdom. The mineral wealth is there, and only waits the application of the key to effect its liberation, and thereby produce solid comforts, peace and plenty, among a grateful and generous people.

Cork, July 14. A PRACTICAL MINER.

We understand, that Alex. Alison, Esq., of Oakley and Blair Castle, intends to offer himself to the constituency of the Stirling district of burghs, at the next election, as their representative in Parliament. He has met with very decided encouragement in Dunfermline, where, in consequence of his connection with the great iron-works in that neighbourhood, he is well known; and we hope the electors will so far study their own interest, as to return so excellent a member as Mr. Alison is sure to prove.

PROGRESS OF IRON SHIPBUILDING.—Mr. James Boydell, of the Oak Farm Iron-Works, whose name we have often had occasion to notice, in connection with important improvements in the iron manufacture, has secured a patent for a new method of connecting wood and iron together for building ships, and also for an improved plan of fastening the sheets of iron to the ribs in vessels built entirely of iron. In the former, the ribs are of angle iron, a section of which is in this form ⊢; to the inner and broadest surfaces of these, the plates of iron are rivetted, the entire spaces between the ribs are then filled up with wood, the grain running longitudinally from stem to stern, and the outer surface flush with the outer surface of the iron ribs—over this the planking is fastened, and the sheathing then applied—the whole to be caulked in the ordinary manner. For fastening the sheets on vessels composed entirely of iron, each rib is grooved on the outer surface throughout its length; each sheet of iron has its edges turned down at right angles, which thus hook into the grooves; these are wedged tight together by wedge-formed bars hammered into the grooves, which bars are fastened inside, by driving keys through them and the ribs—the whole thus forming one compact mass.

PATENT STEAM RIVETTING MACHINE.—Mr. James Garforth, of Dukinfield, has obtained a patent for a machine for rivetting iron plates in the construction of boilers and other works. It consists of a cylinder and piston placed horizontally, the end of the piston rod forming the die, or hammer, and a substantial mass of iron presenting a small steel face to the rivet, the anvil. The valves are worked by hand to admit the steam on either side of the piston, as required; and the operation is performed on each rivet, at one or more blows, according to the area of the piston, length of stroke, pressure of steam, &c.

THE EUPHONIA, OR SPEAKING AUTOMATON.—We had an opportunity of inspecting, on Tuesday last, a very wonderful piece of mechanism—the labour of 25 years—possessing all the powers of articulation! The Automaton can plainly, at the will of the casual spectator, speak any sentence or words, in any language, sing, whisper, laugh, &c.; the organs of articulation are formed of caoutchouc—exactly resembling those appertaining to humanity—and, by means of keys, and a bellows (for the lungs), obstacles which have hitherto seemed insurmountable, have been conquered. Prof. Faber, to whose ingenuity and patience this extraordinary production is due, has achieved a triumph in mechanical inventions, and which will, doubtless, prove greatly attractive as an exhibition.

THE RAJAH OF TRAVANCORE AND HOLLOWAY'S OINTMENT.—On the 11th July, 1846, Professor Holloway was honoured with an order for six of the largest pots of Holloway's Ointment, from no less a personage than his Royal Highness the Rajah, or reigning sovereign, of Travancore, through the eminent firm of Messrs. J. Cockburn and Co., East India merchants, No. 11, New Broad-street, London. The ointment, it appears, is for the personal use of the Rajah, and will be employed under the superintendence of his private physician. Holloway's ointment is sold all over India, being a certain cure for ulcers, wounds, sores, and abscesses, even if of twenty years' standing; and may be obtained of the proprietor, 244, Strand, London, and of every medicine vendor. 43

DOMESTIC BREWING—the PATENT CONCENTRATED MALT AND HOP EXTRACT, enables PRIVATE INDIVIDUALS to MAKE FINE HOME-BREWED ALE,
WITHOUT EMPLOYING ANY BREWING UTENSILS.—It has only to be dissolved in hot water and fermented.—Sold, in jars, from 1s. to 7s. 6d., and 14s. 6d., by the BRITISH NATIONAL MALT EXTRACT COMPANY, 45
7, NICHOLAS-LANE, LOMBARD-STREET; Petty, Wood, and Co., 53, Threadneedle-street; Wix and Sons, 22, Leadenhall-street; Batty and Co., 15, Finsbury-pavement; De Castro and Peach, 65, Piccadilly; Hockin and Co., 38, Duke-street, Manchester-square; and all respectable oilmen and grocers.—Also, may be had, gratis,

I. REMARKS ON IMPROVEMENTS IN BREWING, by using the Patent Malt and Hop Extract, enabling families to brew without brewing utensils.

II. INSTRUCTIONS FOR BREWING from the Patent Malt and Hop Extract.

III. OPINIONS RELATIVE TO THE MEDICINAL PROPERTIES OF MALT AND HOPS.

London: DIRCKS & CO., 7, Nicholas-lane, Lombard-street.

PROGRESS OF FRENCH MINING INDUSTRY.

[FROM OUR PARIS CORRESPONDENT.]

In the Report of the Engineers of Mines (from which some figures were quoted in my last letter), it is stated that the importation of coal from England, underwent, for the first time since 1831, a diminution in 1843 and 1844, on account of the duty imposed by England on coal sent out of the country. As, however, that duty was abolished in 1845, it is presumed that the importations will have greatly increased. In 1832, France received from England 375,300 metrical quintals of coal; in 1836, the quantity increased to 1,695,093 metrical quintals: 1838, to 3,046,844; 1840, 3,807,739; 1841, 4,299,499; 1842, 4,907,382; in 1843, it fell to 4,556,662; and in 1844, to 4,276,936. In 1841, it appears that the *bassin* of the Loire yielded 12,348,438 metrical quintals; of Valenciennes, 9,271,763; of Alais, 3,696,990; of Creuzot and Blanzy, 2,250,000; of Anbin, 1,520,894; of other places, 8,739,310—making 37,827,393 metrical quintals. France imported 17,558,839 metrical quintals—viz.: 11,157,949 from Belgium; 4,276,936 from Great Britain; 2,090,367 from the provinces of the Rhine; 33,607 from other countries. Yet strange to say, though obliged to depend upon the foreigner for the supply of nearly one-half of her coal, she contrived to *export* 125,766 metrical quintals (of all places in the world) to Belgium, 117,427 to Switzerland, 88,635 to Algiers, 62,409 to Spain, 62,243 to Sardinia; 24,932 to the German States; 6541 to the kingdom of the Two Sicilies, 6934 to French colonies, 22,866 to different countries. Deducting the exportations from the grand total of 55,386,754 metrical quintals represented by domestic supply, and importations from abroad, it will appear (as was stated, by-the-bye, in my last letter), that the actual consumption of France was 55,868,501 metrical quintals. Of the 37,827,395 metrical quintals domestic products, 5,799,240 are described as anthracite; 2,290,433 as hard coal *à courte flamme*; 3,755,624 as *grasse marechale*; 19,617,330 as *grasse à longue flamme*; 4,883,997 as *maigre à longue flamme*; 1,480,771 as lignite, stipite, &c. The total increase of 1844 on 1843 was 901,989 metrical quintals.

Without repeating the figures given in my last, on the production of iron, it may be stated that the *exploitations* of iron ore, and the accessary industries of preparing the ore for fusion, and conveying it to the furnaces, created in 1841 a total value of 14,774,340 fr.—of this 1,474,302 figured as rent to the State and proprietors of the soil, 4,851,809 francs for working, 1,562,885 for washing, 263,985 for grillage, and 6,621,359 for conveyance. The last item, it will be observed, is most formidable; and even with the improvement of railway and water communication, will always be a heavy burthen on the iron manufactures of this country. The total quantity of ore extracted in 1844, from the French soil, was 11,980,157 metrical quintals; and 67,163 metrical quintals were imported into France; making a total of 12,047,320. Of this 8478 metrical quintals were exported to the German States, and the remaining 12,038,842 were employed in the French furnaces and foundries; of the *importations*, it appears that the Zollverein sent 26,251 metrical quintals, Tuscany (including the Isle of Elba) 23,434, Switzerland 13,636, the United States 3332, other countries 510. It is not a little singular, that, though the United States are laid under contribution, nothing whatever should be received from England, unless it be a fraction of the miserable 510 metrical quintals of "other countries."

A report has been current, during the last few days, that the Minister of Commerce intends to authorise, by Royal ordonnance, the importation of sheet iron free of duty, as a concession to the shipping interest. I have not been able to trace this report to any creditable source; but I should not be surprised to find it true, inasmuch as the ironmasters have more than once stated that they would not offer any opposition to such a proceeding. But whether it will be any real relief to the shipping interest, the cost of freight being so great, is another question. For that, however, the ironmasters don't care one single straw—so long as they can stave off the dreaded competition with England, they are perfectly content.

In the last session the Chamber authorised not less than 2059 kilometres of railway; in the session previous, 2309 kilometres were ordered to be conceded. Deducting from the last figures, the railways already supplied with rails, and those for which contracts have been entered into, we shall have in round numbers about 3000 kilometres of railways demanding to be supplied within three, or at the outside four, years from this present time. In 1844, France yielded 4,271,753 metrical quintals of wrought iron, and 3,150,125 of raw iron, which were totally insufficient for her annual demand. Supposing she be able to double those quantities (a thing perfectly impossible) within the next three or four years, they will still not equal her ordinary demands, which are ever increasing. What, then, is to become of the 3000 kilometres of railway? Where will they get their rails and iron? And what will become of the railways that will be voted in the next session?

The waters rushed into the mine of Gague Petit, near St. Etienne, a few days ago, and nearly killed all the men employed, 25 in number: 22 contrived to escape by a miracle, but three were left at the bottom of the mine, and (it was supposed) were drowned.

Messrs. Sherwood, Prance, Sympson, and other capitalists, of London, have formed a company for working the iron-works at Guines, near Boulogne.

At their last monthly meeting, the ironmasters of Belgium decided that the present prices should be maintained for the current month; but notified that, on account of the great demand for iron, an advance would take place for the month ensuing.

The strike at the coal-pits in the northern departments was at one time very formidable—the men of almost all the pits having turned out. It was feared that they would proceed to acts of violence, and a strong military force was present. The greatest alarm existed for miles around. After one day's idleness, however, the men consented to re-enter the pits at Anzin, Denain, Abscon, and Vicoigne. The men of Fresires and Vieux-Conde, however, held out; but do doubt whatever was entertained, that they would resume their labour yesterday morning. Whilst on strike, the men behaved themselves with great moderation and propriety. It is to be hoped that, if they have any just cause of complaint, it will be removed by the companies—for certainly, take them altogether, there is not a more hard working or ill-paid body than the miners of France. True, they are frequently on strike; but that is excusable when every advantage is sought to be taken of them.

At the last fair at Chalons-sur-Saone, efforts were made to obtain an advance in prices of iron, but without success. The *lamines* of the Loire were 330 fr. for the first class at Lyons. The *fontes fines de Comté* declined 20 fr., in consequence of which they were quoted 550 fr. at Gray. The *fers marchands* of the Haute Marne were 420 fr. at Gray. The *fontes fines* at Chalons were offered at 230 fr. first quality, and 225 fr. the second; they were only taken at 225 fr. first quality. In *fonte blanche* some bargains were made for a long term at 200 francs. An attempt was made to increase the price of *essieux* by 5 fr., but the Lyons tradesmen would not buy, alleging that they were fully supplied. From St. Dizier of the 17th, letters state that there is an abundant supply of wood, and that the arrivals do not discontinue, notwithstanding the commencement of the harvest. The price of conveyance was high. The Marne was exceedingly low—in some places so much so, that it could be crossed on foot. By water the transports were 22 fr. for iron, 24 fr. for cast iron; by waggon to Paris, 32 to 33 fr.; Lille, Douai, Arras, 40 fr.; Cambrai, 40 fr.; St. Quentin, 36 fr.; Valenciennes, 42 fr.; Abbeville, 55 fr.; Gray, 25 fr.; Orleans, 48 fr.; and other places higher than usual.—*Paris, July* 22.

Messrs. Bramah and Robinson, engineers, have made a series of hollow iron tubes, which are to be sunk in the Goodwin Sands, and erected into a pillar, firmly fastened together with transverse iron ties. A light will be placed at the summit, and life-buoys will float around.

Just published,
AN EXPOSITION OF THE DANGERS AND DEFICIENCIES OF THE PRESENT SYSTEM OF RAILWAY CONSTRUCTION, with SUGGESTIONS FOR ITS IMPROVEMENT. By C. H. GREENHOW.
John Weale, 59, High Holborn.
Models, illustrating the principle, may be seen at No. 3, Lothbury. 47

PROJECTED RAILWAYS.—BENSON, LOGAN, & CO.'S PATENT METALLIC SAND CEMENT.
Its MERITS, as stated in letter to the proprietors, by James Thomas Knowles, Esq., architect, Raymond's-buildings, Gray's Inn, are—
1.—"The great tenacity with which it adheres to brick, stone, and iron.
2.—"Its freedom (when properly applied) from those cracks and flaws by which the cements generally used for external stuccoing are so frequently disfigured.
3.—"The total absence of the unsightly tint produced by vegetation.
4.—"The increased hardness which it acquires from exposure to atmospheric influences.
5.—"The great beauty, accuracy, and durability of the mouldings, capitals of columns, crockets, finials, and other architectural enrichments and decorations formed of it—the smallest and most delicate members of which, as well as the sharpest arises, have withstood uninjured the severities of our climate, during many winters, and now present the same perfect and highly finished appearance as would be produced by stone carvings carefully executed. 48
6.—"The excellent and agreeable tone of colour which it assumes naturally, and retains without the aid of any colouring or painting.
And, lastly,—"Its extreme hardness and almost entire incompressibility, when used as a mortar, in the construction of inverted or relieving arches, foundations under important superstructures, and small bearing piers, which have to sustain great weights. For all these purposes it has been extensively used under my directions; and, in some cases, has been exposed to *very severe trials*. The results have, however, *without one exception*, been most satisfactory; and I do not believe that there are any known substances so well adapted for the execution of works, in which the greatest strength and durability are essential."
Price of metallic sand at Swansea, place of manufacture, 10s. per ton, or in London, 20s. per ton of 21 bushels.
Further information will be given, and specimens shown, on application to Mr. C. K. Dyer, 4, New Broad-street; and at the Metallic Cement Wharf, King's-road (opposite Pratt-street), Camden New Town, London.

UNION BANK OF AUSTRALIA, 38, Old Broad-street.—The directors having this day declared a DIVIDEND of THREE PER CENT. for the half-year, upon the entire paid-up capital of the bank, PAYABLE on the 3d of August, Notice is hereby given, that the TRANSFER BOOKS will be CLOSED from the 21st inst. until that date. By order of the board,
London, July 20, 1846. SAMUEL JACKSON, Secretary. 49

SIXTH REPORT OF THE DIRECTORS OF THE COMMERCIAL BANK OF LONDON, Lothbury, and 6, Henrietta-street, Covent-garden.—At an Annual General Meeting of shareholders, held at the Banking-house of the company, Lothbury, on Tuesday, July 21, 1846. Present:—

DIRECTORS,
JOHN TAYLOR, Esq., Deputy-Chairman.

Thomas Barnewall, Esq.	Jonathan Hopkinson, Esq.
William Sprott Boyd, Esq.	Edward Oxenford, Esq.
W. R. Collett, Esq., M.P.	George Rennie, jun., Esq.
Henry Cornfoot, Esq.	John Savage, Esq.
Edward Cotton, Esq.	John Shewell, Esq.
James A. Douglass, Esq.	

and 32 proprietors. 50

The chairman, Richard Walker, Esq., M.P., being absent, the chair was taken by the deputy-chairman, J. Taylor, Esq.

The advertisement calling the meeting having been read, the following report from the directors was read by the manager:—

REPORT.

The directors have the pleasure of placing before the proprietors the sixth annual statement of the affairs of the company.

During the past year the business of the bank has continued to improve steadily and satisfactorily.

Since the last annual meeting, the balance of the preliminary expenses account, amounting to £9085 19s. 11d., has been paid off, and the account closed.

By the accompanying balance-sheet it will be seen, that, after writing off all bad and doubtful debts, and paying the charges and current expenses of the past year, the net profits amount to £13,087 5s. 8d.

The directors have determined to declare a dividend, at the rate of £6 per cent. per annum, free of income tax. After paying this dividend, and allowing for rebate of interest upon current bills, there will remain the sum of £4410 7s. 2d. to be added to the reserve fund—increasing that fund, with the additions made during the year, to the sum of £10,066 19s. 8d.

In compliance with the provisions of the Deed of Settlement, the following directors—viz.: William Sprott Boyd, Esq., Thomas Grimsditch, Esq., M.P., John Harvey, Esq., and John Taylor, Esq., retire from office; and William Sprott Boyd, Esq., and John Taylor, Esq., being eligible, offer themselves for re-election: Wm. Beresford, Esq., M.P., and Joseph Thompson, Esq., being duly qualified, offer themselves as candidates at this meeting.

The report and balance-sheet having been read, the chairman, John Taylor, Esq., on the part of the directors, declared a dividend, at the rate of £6 per cent. per annum, free of income tax—payable on and after the 1st of August next.

COMMERCIAL BANK OF LONDON.

BALANCE-SHEET, THE 30TH OF JUNE, 1846.

Capital subscribed, £614,300				Cash in hand, Government securities, bills discounted, &c.	£577,875	16 3
Capital paid up	£122,860	0	0			
Guarantee fund, invested in 3 per Ct. Reduced Stock	5,656	12	6	Value of banking premises, fittings, and furniture	4,000	0 0
Balance due to the customers of the bank	440,271	18	1			
Balance carried down, after deducting bad and doubtful debts, and paying all charges and current expenses	13,087	5	8			
	£581,875	16	3		£581,875	16 3
Dividend, at the rate of 6 per cent. per annum, for the half-year ending 31st Dec., 1845, already paid	£ 3,418	3	6	Balance brought down	£ 13,087	5 8
Ditto, for the half-year ending June 30, 1846	3,624	5	0			
Rebate of interest on current bills	1,634	10	0			
Balance carried to guarantee fund—making that fund now £10,066 19s. 8d.	4,410	7	2			
	£13,087	5	8		£13,087	5 8

1. Resolved unanimously,—That the report just read be approved, printed, and circulated amongst the proprietors.
2. Resolved unanimously,—That John Taylor, Esq., be re-elected a director of this company.
3. Resolved unanimously,—That William Sprott Boyd, Esq., be re-elected a director of this company.
4. Resolved unanimously,—That William Beresford, Esq., M.P., be elected a director of this company.
5. Resolved unanimously,—That Joseph Thompson, Esq., be elected a director of this company.
6. Resolved unanimously,—That the best thanks of the proprietors are due, and are hereby given, to the directors, for their constant attention to the interests of the bank.
7. Resolved unanimously,—That the thanks of this meeting be given to the manager, A. R. Cutbill, Esq., for the able, efficient, and zealous manner in which he has discharged his duties. JOHN TAYLOR.
8. Resolved unanimously,—That the thanks of this meeting be offered to John Taylor, Esq., for his able and courteous conduct in the chair this day.
A. R. CUTBILL, Manager.

COMMERCIAL BANK OF LONDON.—The directors hereby give Notice, that a DIVIDEND, of 6 per cent. per annum, for the half-year ending June 30, 1846, on the paid-up capital, will be PAYABLE at the banking-house of the company, in Lothbury, on and after the 1st of August next. By order of the board,
Dated 21st July, 1846. A. R. CUTBILL, Manager. 51

MANUFACTURERS' MUTUAL PROTECTION SOCIETY
TRUSTEES.
ROBERT ALEXANDER GRAY, Esq., 29, St. Swithin's-lane.
JOHN RATLIFF, Esq., Wood-street, Cheapside.
JOSEPH TRITTON, Esq., Lombard-street.
BANKERS.
Messrs. Barclay, Bevan, Tritton, and Co., London.
SOLICITORS.
Messrs. Vallance and Vallance, 20, Essex-street, Strand, London. 52

This society is established for the purpose of protecting Merchants and Manufacturers from the fraudulent use and imitation of their names, trade-marks, and manufactures.

The courts of law in this country, as also those of the United States and France, afford to the British manufacturer the fullest protection. Experience has, however, shown that there are hundreds of merchants and manufacturers who are suffering from a fraudulent imitation of their names, manufactures, and trade-marks, but who do not feel disposed to enter into litigation, and fight individually a battle which is really for the benefit of all manufacturers.

For a small annual subscription, and without any further charges, or incurring any further liability or expense, each member has the opportunity of obtaining, free from all charge, opinions as to his rights in respect of any fraudulent imitation of his name, trade-marks, or manufactures; and he is also entitled to put the society in motion against any person who may counterfeit his name or trade-marks, whether in the United Kingdom, on the continent of Europe, or in any part of the British dominions, or the United States. The whole cost of such proceedings is borne by the funds of the society.

The funds of the society are vested in the trustees, and the affairs are under the control of the committee of management.

Prospectuses, and any further information, may be obtained on application, by letter, addressed to the secretary; or, personally, at the office of the society, No. 20, Essex-street, Strand, London.

PATENT VULCANISED INDIA RUBBER.
CHARLES MACINTOSH & CO.
Beg to inform the Public that they are the Patentees and sole Manufacturers of the above Substance. The distinguishing properties of the Patent Vulcanised India Rubber are, its uniform elasticity in various temperatures; its not becoming hard on exposure to extreme cold, nor liable to injury from contact with heat. Its strength is greater than that of native caoutchouc; it is indissoluble in essential oils; it resists the effects of oil and grease in different degrees, according to the purposes for which it is manufactured.

Among the various useful applications of the Patent Vulcanised India Rubber, may be enumerated—

WASHERS or RINGS for joints in steam, and water-pipes, and for valves for steam-engines; by which labour is economised, and the joints more effectually made, than by any other mode.

ELASTIC BANDS, for holding together bundles of letters, papers, &c. 53

In ARTICLES of DRESS—Springs for waistcoat-backs and trowsers, straps for trowsers, brace-ends, garters, &c.

In CALICO-PRINTING, the substitute for blanket has been found to produce a much finer impression than the woollen hitherto used, and with considerably less pressure; hence a saving in power, and wear of lapping.

COVERS for furnishing rollers (in lieu of flannel), are perfect for their purpose; and, as the India Rubber does not absorb moisture, they can be easily cleansed, and no colour need be wasted.

FLEXIBLE HOSE for fire-engines, brewers' purposes, gas, &c.

SPRINGS for railway and other vans and carriages, and for buffers and drags

CORRUGATED FELT, for placing between the rails and the chairs of railways, on the sleepers, to take off the ultimate concussion, and to prevent in wooden continuous sleepers the embedding of the rails, &c.

Cambridge-street, Chorlton-upon-Medlock, Manchester, April, 1846.

CHARLES MACINTOSH & CO., PATENTEES, and SOLE MANUFACTURERS, of the VULCANISED INDIA RUBBER, beg to inform MERCHANTS and FACTORS, that they have ESTABLISHED WORKS at
No. 22, *COLESHILL-STREET, BIRMINGHAM,* 54
for the MANUFACTURE of ARTICLES from the VULCANISED INDIA RUBBER, under the patent granted to S. Perry and T. B. Daft; and, for the convenience of those parties who have been supplied with elastic bands for holding together parcels of papers, &c., vest backs, trouser puffs, straps for trousers, boot gussets, belts, garters, &c., they have retained the original numbers given to all the articles, so that orders described accordingly will have immediate attention. The Vulcanised India Rubber has been much improved in quality, and the efflorescence of sulphur on the surface entirely removed.
Cambridge-street, Manchester, June 24, 1846.

London:—Printed and Published, weekly, by HENRY ENGLISH, at the Office, No. 26, FLEET-STREET, in the city of London, where all Communications and Advertisements are requested to be forwarded—addressed to "the Editor"—post-paid. [*July* 25, 1846.